Canadian Environmental Assessment Agency
Agence canadienne d'évaluation environnementale

REVIEW OF THE CANADIAN ENVIRONMENTAL ASSESSMENT ACT

Background Study

TRENDS IN ENVIRONMENTAL ASSESSMENT

Canada

Trends in Environmental Assessment

Prepared for

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1 INTRODUCTION AND APPROACH

1.1 PURPOSE

This discussion paper is one of several background papers, prepared on behalf of the Canadian Environmental Assessment Agency (the Agency), leading up to the Five Year Review of the *Canadian Environmental Assessment Act (the Act)*. It seeks to analyze key EA challenges and trends within Canada and within selected other countries.

1.2 APPROACH

This discussion paper is largely based on literature review and agency contacts. It encompasses two major elements 1) a domestic analysis (the ten provinces and the three territories) and 2) an international analysis (Australia, Norway, United Kingdom, Germany, Netherlands and the United States).

The analysis of national (Section 2) and international (Section 3) EA challenges and trends is selective. Each jurisdictional analysis addresses the following topic areas:

- Resources devoted to EA;
- Complex methodological issues (e.g., cumulative effects assessment, biodiversity and life cycle analysis);
- Public participation approaches (e.g., mediation, participant funding);
- Policy, program and plan EA (i.e., strategic environmental assessment - SEA);
- Scientific challenges to EA (e.g., global climate change, biological diversity, transboundary pollution); and
- Administrative and procedural challenges to EA (e.g., the integration of EA within broader environmental management systems and planning).

Overall, differences and similarities between the described characteristics described and those of the Canadian Federal system are indicated. EA laws and practices for Canadian projects, outside the boundaries of Canada, are not considered.[1] Practical lessons for the Agency are identified.

Conclusions are presented in Section 4.

[1] This study compares the domestic application of domestic environmental assessment laws and practices. It does not include a comparison of environmental assessment laws and practices for transboundary or international projects.

Appendices A and B respectively provide an overview of national and international EA legislation, regulations, guidelines and procedures. Both appendices contain tabular summaries, by topic area, of EA challenges and trends for each jurisdiction. Appendix B includes an overview of the EA initiatives of the European Union to place in context the European country analysis. References are provided in Appendix C. Appendix D is the survey form.

2 DOMESTIC ANALYSIS

2.1 INTRODUCTION

This section analyzes EA challenges and trends in the ten provinces and three territories. The analysis focuses on each of the major discussion paper themes. Patterns across the jurisdictions are identified and compared against Canadian Federal EA requirements and activities. Key similarities and differences are noted.

Appendix A provides an overview of the EA systems in each jurisdiction. Summary tables (Tables A-1 to A-12) highlight EA trends and challenges, by topic area, for each Canadian EA jurisdiction.

2.2 EA RESOURCES

Provincial and territorial EA budgets have, over the past two to three years, remained essentially stable in ten of the jurisdictions. EA budgets have increased in one jurisdiction. They have declined in two others. Overall, environmental budgets have declined in six of the jurisdictions. Three of the jurisdictions indicated that the environmental budget reductions sometimes create difficulties in ensuring timely and thorough technical EA reviews.

All of the jurisdictions are coping, some only just, with the demand. Several are hard pressed. Occasionally this leads to overtime, delays and, more often, to an inability to adequately address policy, methodological and applied research concerns. Demands on EA resources tend to fluctuate depending on economic conditions. They also are dependent upon broader governmental organizational strategies, programs and priorities. The issue of available resources pertains both to the EA agencies and to the line agencies, which provide specialized input. In the latter case, delays can occur in technical review. Sometimes there is a lack of appropriate expertise available within government agencies to

adequately review EA documents. Government reorganizations, cutbacks and staff turnover have inhibited the building of an "institutional memory". One response to these concerns has been the increasing use of external experts, where resources permit. Capacity building is a priority in the Territories.

The need to make the most efficient and effective use of available resources has resulted in more scoping, additional procedural streamlining and the coordinated use of available resources, among agencies and levels of government. EA agencies are pressing line agencies to explicitly define their priorities, acceptability standards and review criteria. Effective links, with other environmental management agencies, are especially critical as governments increasingly move toward "single window" environmental approvals. This emphasis on efficiency and streamlining mirrors a broader pattern across government activities in all the jurisdictions.

The Agency budget has remained generally stable over the past three years. The net cost for the 1999-2000 program is to increase by approximately 8% over the 1998-1999 program. There have been budget cuts in recent years for some departments undertaking the technical review of EA documents. The Agency has contributed to more effective and efficient EA resource utilization by reducing EA duplication and overlap (the subject of a separate discussion paper), by facilitating scoping, by conducting applied research and by supporting information sharing, training and methodological advances.

The resource constraints facing most Canadian EA jurisdictions underscore the need for the effective sharing of available resources. Both governmental levels will need to continue to explore, both individually and jointly, means of facilitating EA efficiency and effectiveness. Notwithstanding such efforts, resource limitations are sometimes likely to impede EA practice, especially the technical review of EA documents. These constraints suggest the continuing need for a leadership role by the Agency in advancing Canadian EA practice.

2.3 EA METHODOLOGY

Most jurisdictions address methodology through project-specific guidelines. Several jurisdictions stressed the importance of methodological flexibility. Generic guidelines are still considered desirable. However, a "performance standards" approach was preferred. Project and local environmental conditions were identified as critical considerations.

Updating and refining guidelines, based on project experience and methodological advancements, were emphasized.

Most jurisdictions have prepared procedural guidelines and fact sheets, several of which are available on-line. Sometimes bulletins address updates and refinements. General methodological advice is provided in guidelines in several jurisdictions, most notably in Quebec, Ontario and British Columbia. More specific methodological advice is offered in guidelines in selective jurisdictions. Examples include cumulative effects in Alberta and evaluation methods in Ontario. Project type guidelines have been prepared in Quebec, Alberta, Nova Scotia, Ontario and Saskatchewan.

A substantial pool of environmental knowledge and expertise is available within line agencies. Many technical manuals, guidelines, standards and criteria have been prepared in provinces such as British Columbia, Alberta and Ontario. All jurisdictions draw upon the services of technical experts from the Federal government and from universities and consulting firms. These experts and materials help determine and evaluate baseline data, suggest technical alternatives, select and evaluate models and forecasting procedures, interpret impact significance and choose and evaluate the effectiveness of mitigation and monitoring requirements. Bi-lateral and multi-lateral EA and project agreements were considered conducive to knowledge and expertise sharing.

Considerable potential exists for further resource and expertise sharing. Forums, such as meetings of EA administrators and of Regional Environmental Assessment Coordinating Committees, contribute to meeting this need. This knowledge base can be further enhanced by more applied research at EA and environmental centres of excellence. The Agency has sponsored feasibility studies of a national EA Centre and of an International EA Network.

Methodological advances are occurring in several jurisdictions through increased efforts to integrate EA with environmental protection, regional and community land use planning, resource management and broader concepts and imperatives such as sustainability, pollution prevention, ecosystem management and the precautionary principle. EA has been established in some jurisdictions within broader environmental management – quality legislation. Sustainability and biodiversity strategies, government reorganization and administrative procedures such as technical review teams are helping to facilitate integration.

The Agency has sought to establish and refine the methodological foundation for Canadian EA practice on several fronts. Overall, EA

guidance documents have been prepared for EA managers, for EA practitioners and for the public. Guidance documents address EA process activities such as scoping, need, alternatives, mediation, impact significance interpretations, the analysis of cumulative effects, and the integration of biodiversity concerns. Procedural guidance has been provided for conducting public review panels, for providing participant funding, for involving the public, for interagency coordination, for the use of the Project Registry and for EA document preparation. Guidance that is more specific addresses comprehensive studies, class assessments, mining projects, physical and cultural heritage impacts and Agency policies such as cost recovery. The Agency has prepared a Directory of EA practices and has compiled various EA bibliographies.

The Agency has prepared general guides, reference guides, operational policy statements, information bulletins, practitioner's guides and bibliographies. These documents are generally available at the Agency Web site. The Agency sponsors applied research and has contributed to various international policy forums and research initiatives, such as the *International Study for EA Effectiveness*. Planned Agency initiatives address traditional ecological knowledge, national EA standards, class screening models, best practice, project descriptions, climate change, EA quality, the effectiveness of mitigation measures and the conduct of EAs for federally funded projects on reserve lands.

Several Federal departments have prepared procedural EA guidelines. Parks Canada has prepared a cumulative effects guide. CIDA has sponsored a guide for involving Indigenous peoples. Considerable EA-related research has been sponsored through the former Canadian Environmental Assessment Research Council.

The Agency has assumed a lead role in advancing EA methodology and practice. Provincial and territorial methodological advances have been inhibited, in some jurisdictions, by resource constraints. Provincial and territorial contributions to the advancement of EA methodology are likely to derive from project-type and project specific guidelines, from technical review experiences and expertise, from experiences with impact management practices and from initiatives to integrate EA with other forms of environmental planning and management.

2.4 PUBLIC PARTICIPATION

Public participation approaches vary greatly among the provinces and territories. The general trend is to provide public participation opportunities at each major EA process stage.

The complete documentation of inputs and clear and complete written responses to questions and comments is receiving increasing emphasis. All jurisdictions stress the desirability of early involvement, including pre-submission consultation. Several insist on a public consultation program. The BC EA legislation provides for the establishment of a public advisory committee.

Ontario, British Columbia, Saskatchewan, Quebec and Manitoba are preparing public consultation guidelines or updates. Guidelines, for the involvement of Indigenous peoples, have been prepared in British Columbia and in Saskatchewan. The need for enhanced procedures to address the involvement of Indigenous peoples was acknowledged in several jurisdictions. Saskatchewan holds a conference every two years to discuss what does and does not work in public involvement.

There has been a steady increase in the establishment of project registries and in the availability of EA materials on-line. Complete EA reports are now available on-line in British Columbia. Some jurisdictions, such as Newfoundland, provide bulletins on EA activities at their web sites.

There has been a trend toward more interactive consultation approaches, such as open houses, workshops, one-on-one meetings and community advisory committees. Such procedures have proven more conducive to raising and resolving issues. Post-approval project liaison committees are increasingly common. In a few Alberta cases, project-liaison committees have evolved into regional environmental action groups or networks. The need to tailor EA consultation procedures to each project and to each stakeholder group is increasingly recognized. Also acknowledged is the need to use multiple methods and to expect a high level of knowledge among public participants. Recent public consultation guidelines focus on principles and performance standards rather than on specific methods.

Mediation is available as an option in several jurisdictions and has occasionally been applied. Intervenor and participant funding is rarely available. Intervenor funding, where available, tends to take the form of cost awards to interveners by hearing panels at the end of hearings.

Transparent decision-making is receiving increasing emphasis. It is reflected in the requirement, in some jurisdictions, for the documentation of reasons for all decisions. Increasing stress is being placed on the integration of EA and permitting, as a means of reducing the confusion that sometimes surrounds the environmental approval process. Decisionmaking in Alberta is especially transparent because most Alberta

EAs are reviewed by one of two boards. The pattern in many Canadian jurisdictions tends to be an internal government decision for most EA projects, often without a traceable basis for the conclusions reached. The *Environmental Rights Act* in the NWT and the *Environmental Bill of Rights* in Ontario also facilitate decisionmaking transparency.

The three territories have moved from transparent to shared decisionmaking, with an emphasis on co-management and decentralized decisionmaking. Co-management was identified as an emerging approach in Saskatchewan, especially with Indigenous communities. Public participation is further facilitated in the three territories by direct links between EA and land use planning approvals.

Public participation in Federal screenings is at the discretion of the responsible authority. In accordance with the Act, all environmental assessments must have a project registry. The registry must be accessible to the public. Many environmental assessments are listed with the Federal Environmental Assessment Index. Posting on the Federal EA Index is at the discretion of the responsible authority. The public can comment on a comprehensive study before the report is finalized. There are numerous public consultation opportunities for panel reports. The public can participate in scoping meetings, in the preparation of draft guidelines and in panel hearings. Intervenor funding is available. The Canadian EA process allows for mediation, although this provision has not yet been applied.

The Agency is seeking to facilitate public consultation with a discussion paper on public consultation in comprehensive studies, public access through the Federal Environmental Assessment Index, revised procedures and guidelines for the Participant Funding Program and initiatives to develop and use alternative dispute resolution. Federal efforts to enhance the EA involvement of Indigenous peoples address the integration of traditional knowledge, substitution agreements with Indigenous land-claims authorities, the establishment of EA regimes under the *First Nations Land Management Act* and the conduct of EAs of federally funded projects on reserve lands.

The provinces and territories have skills and experience in facilitating early, on going, interactive and transparent planning and decisionmaking. All also have knowledge and experience in the choice, application and evaluation of public consultation methods. Participant and intervenor funding and alternative dispute resolution practices have been less fully developed at the provincial and territorial level. Enhanced procedures, for involving and sharing planning and decisionmaking with Indigenous peoples, are priorities at both levels.

2.5 STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

SEA is only being formally addressed in Manitoba and Quebec. SEA was proposed and rejected in Saskatchewan, New Brunswick and British Columbia.

The Manitoba *Sustainable Development Act* requires the enumeration of sustainable development principles. It requires the establishment of a provincial sustainable development (SD) strategy and a system of SD indicators. It includes provisions for a provincial code of practice, for financial management and reporting and for schedules with SD principles and guidelines. The White *Paper on Sustainable Development* calls for a consolidated development review procedure (a sustainability assessment). This recommendation is still under consideration by a multi-stakeholder group.

A major SEA research paper was recently completed (Crowley 1998), on behalf of the Quebec government. This paper addresses national and international SEA systems and requirements. An inter-ministerial group is currently considering how best to proceed.

Several provinces provide for the assessment of policies, plans and programs in EA legislation. A discretionary provision, subject to the consent of the proponent, is included in the proposed *Yukon Development Assessment Process*. The application of these provisions has been rare. There are scattered examples of plan-level EAs across Canada. Examples include the Ontario Hydro Demand Supply Plan, the Salmon Aquaculture Plan and the Bamberton Community Plan in British Columbia and forest management plans in Saskatchewan and Manitoba. Occasionally multi-project and area-wide assessments have been conducted. Class or category assessment requirements, in Ontario, BC, and proposed for the Yukon, make it possible to assess multiple smaller projects and activities. Several jurisdictions require the consideration of transboundary, cumulative and interrelated effects. An individual EA, that considers cumulative effects, need and alternatives to the proposal, represents a middle ground between EA and SEA.

Newfoundland has proposed to remove the reference to policies, plans and programs from its EA legislation. This proposed change is being reconsidered because of considerable opposition. The same province has proposed to include a section on environmental considerations in submissions to Cabinet. Similar informal procedures are in place in other provinces such as New Brunswick and Saskatchewan. There is

apparently little political will for SEA, except possibly in Manitoba and Quebec. It is argued that EA is more suited to project evaluation. Plans and programs are viewed as too fluid and imprecise to systematically evaluate. Confidentiality concerns also are raised and there is an expectation that SEA will be costly, inflexible and autocratic.

Many SEA characteristics, such as the integration of environmental considerations into planning and decisionmaking and the opening up the legislative, plan and program formulation process to greater public involvement, are reflected in numerous provincial and territorial policies, plans and programs. SEA characteristics are evident in provincial wilderness, natural areas and endangered species legislation, in sustainability, biodiversity and protected area strategies, in pollution prevention, environmental quality and ecosystem-based resource management plans, in provincial and regional environmental and growth management plans and in initiatives to link EA with land use planning, environmental protection and resource management. Increasing attention is being devoted, as in *Alberta's Commitment to Sustainable Resource and Environmental Management* (1999), to coordinating and integrating the environmental programs of environmental, resource, energy and economic development departments.

The marriage of SEA principles and procedures, with existing plans and programs, is more likely to receive approval than either comprehensive SEA legislation or EA legislative amendments to address policies, plans and programs.

Canada has launched several initiatives that provide for the strategic assessment of policies and programs. A non-legislated EA process applies to policies and programs submitted to Cabinet. Under this 1990 initiative, Ministers are responsible for assessing environmentally relevant policies and programs and for issuing, as appropriate, statements of environmental consequences. Environment Canada helps develop environmental and sustainable development objectives and policies, in consultation with other departments. It also provides policy, technical and scientific advice. The Agency maintains an inventory of Federal environmental reviews, provides procedural advice and, in consultation with other government departments, proposes and initiates process refinements. The statements of environmental implications are generally submitted as Memoranda to Cabinet. A more detailed EA, in support of the Memorandum, is expected when significant environmental effects are anticipated. Ministers determine the extent and nature of public statements.

The Agency issued a draft *Guide for Policy and Program Officers*, in support of the Cabinet Directive, in 1993. It reviewed the effectiveness of the process in 1996. This review determined that implementation of the Directive had been uneven. The Commissioner of the Environment and Sustainable Development, in its 1998 report, also was critical of the Directive implementation. In response to these concerns, the Agency is updating the Cabinet Directive and Guide. The update is to more formally incorporate EA practices, directed toward sustainable development, into existing departmental practices. The identification and management of environmental effects can, for example, be addressed in departmental annual performance reports, in plans and priorities reports and in all documents submitted to Cabinet approval. The updated guide will clarify content and format, address links between environmental effects and decisionmaking and provide an overview of methods. It is to be completed in 1999. The ongoing auditing function, performed by the Commissioner of the Environment and Sustainable Development, helps improve EA policy and program-level practices among Federal departments.

The Agency is updating a training module on the *Environmental Assessment of Policies, Programmes and Plans*. It is working with other federal departments to develop a consistent approach for preparing EAs for policy and program proposals. It is implementing an action plan that will focus on promotion, training, research, information exchanges and strengthening ties with Federal policy development processes. The Agency is improving linkages between climate change strategies, sustainable development and the use of policy EA tools. It is partnering with other departments and academics to promote policy EA as an instrument of sustainable development.

Several other SEA-type initiatives have been launched at the Federal level. Regulatory impact assessment statements (RIAS) have been broadened to encompass further consideration of environmental effects. A *National Implementation Strategy on Climate Change* has been prepared, which could facilitate the consideration of climate change in Federal policies, programs and projects. A formal EA process for programs under the *Farm Income Protection Act (FIPA)* has been instituted.

Amendments (in 1995) to the *Auditor General Act (Bill C-83)* now require Federal Ministers to prepare departmental sustainable development strategies. The implementation of these strategies is being monitoring by the Commissioner of the Environment and Sustainable Development. A *Guide to Green Government*, to assist Federal departments in preparing sustainable development strategies, has been prepared. Although the provisions fall short of SEA requirements, they do demonstrate a

commitment to the integration of environmental concerns into departmental policies, programs and actions.

Examples of SEAs prepared, under the Cabinet Directive, include the Environmental Review of the North American Free Trade Agreement (NAFTA), the new Minerals and Metal Policy (MMP) of Natural Resources Canada and a scoping study of the North American Waterfowl Management Plan (NAWMP). (Hazell and Benevides 1997; Marsden 1998).

Federal comprehensive studies and panel reports have generally applied to projects. There have been exceptions. The Nuclear Fuel Waste Management Concept was not a site-specific analysis. Interconnected projects, such as the Sable gas field and uranium mines in Saskatchewan, have been evaluated. The class assessment provisions of the Act make it possible to assess recurrent activities and programs. Project-level EA considers cumulative and transboundary effects. Regional development program funding requires a screening analysis.

The Federal government has gone somewhat further than the provinces in the integration of SEA principles and practices at the policy level. The Commissioner of the Environment and Sustainable Development can performs a useful auditing function. Similar requirements exist in Ontario and in the NWT under environmental rights legislation. Recent and anticipated SEA initiatives in Manitoba and Quebec contribute to SEA practice in Canada. Both levels of governments selectively prepared plan-level EAs. Also they integrate environmental and sustainability principles into many government programs. Knowledge pooling, acquired from SEA-related experiences, would further advance Canadian SEA practice.

2.6 SCIENTIFIC CHALLENGES TO EA

Several scientific challenges to EA were identified by all or most jurisdictions. They include biological diversity, global warming, cumulative effects, transboundary pollution and sustainable development. Other recurrent issues raised, although to a lesser extent, included carrying and assimilative capacity, resource management, environmental quality and ecosystem management.

Some identified challenges are clearly regional in nature. The assimilative capacity of inland waters and estuarine environments are particular concerns in PEI. Regional access, wildlife management, energy policy and heritage are especial concerns in the north. Fisheries and forest

protection are a priority in BC. Assimilative capacity, resulting from agricultural wastes, is a particular concern in the Prairie Provinces.

Several jurisdictions made the point that scientific challenges will vary by project and location. Initiatives to address such challenges must begin at the policy level and extent through the program and plan levels. In this way, a context is established for project level EA. Policy and program gaps may, it was pointed out, result in unreasonable expectations regarding what can practically be achieved through a project-level EA. Enhanced links between EA and other forms of environmental management are crucial if such challenges are to be coherently addressed.

The Agency, as pointed out in its *Report on Plans and Priorities*, *Sustainable Development Strategy* and annual *Performance Reports*, has demonstrated its concern with many of these challenges. Sustainability, biological diversity, global environmental change, transboundary impacts, cumulative environmental effects have been priorities. Federal – provincial coordination has been facilitated by multi-lateral and bi-lateral EA accords and agreements, through meetings of EA Administrators and by provincial participation in Regional Environmental Assessment Coordinating Committees.

The Federal government has taken a lead role. Provinces and territories address these challenges with generic and project-specific guidelines and through links between EA requirements and broader provincial strategies, policies and programs. A sound foundation has been established for a coordinated, intergovernmental approach. There are limits to which complete consistency will be desirable or necessary. Regional and project-specific variations will need to be considered. Identifying and addressing gaps and deficiencies in environmental policy and programming should be a priority. Further attention could be devoted to links between EA and other forms of environmental planning and management. Coordinated and consistent approaches among levels and forms of environmental planning and management are likely to result in more efficient and effective responses to these challenges.

2.7 ADMINISTRATIVE AND PROCEDURAL CHALLENGES TO EA

Many administrative and procedural challenges to EA were identified. Among the most frequently cited were; efficiency and streamlining, intergovernmental harmonization and communications, the treatment of

cumulative, biodiversity, transboundary and sustainability effects, environmental monitoring and follow-up, enhanced provisions for public and Indigenous involvement and the implications for EA of court decisions, land claims and self-government settlements and agreements.

All EA regimes are seeking to balance EA efficiency and EA quality and effectiveness. Forging more effective links between EA and environmental protection, resource management and regional and land use planning was a priority. The territorial EA regimes are currently focusing on establishing and refining operational EA systems.

Some jurisdictions identified specific concerns, related to their EA requirements or to government initiatives or major projects occurring, or expected to occur, within or near their boundaries. Offshore projects and projects involving multiple jurisdictions were priorities.

Several provincial and territorial jurisdictions identified administrative and procedural challenges likely to become concerns at both levels. How best to address public – private sector EA interrelationships was a common concern. This challenge is being addressed by the increased use of cost – recovery measures, by considering the EA implications of privatization and by exploring links between EA and private sector environmental management systems (EMS). Measures, to enhance municipal and public involvement, such as participant funding and alternative dispute resolution, were identified as continuing challenges. Both governmental levels are seeking to adapt EA requirements for smaller projects and for projects in sensitive, complex and uncertain environments. Enhancing the integration into EA of human health concerns, risk assessment, traditional knowledge, the precautionary principle and pollution prevention were identified as challenges. Concern was expressed regarding how best to respond to increased litigation in EA practice.

Many shared challenges are being addressed through EA harmonization measures and through individual and joint Agency and provincial / territorial actions. Additional efforts and initiatives to address these shared challenges would benefit EA practice at all levels.

3 INTERNATIONAL ANALYSIS

3.1 INTRODUCTION

The section analyzes EA challenges and trends in Australia, Germany, the Netherlands, Norway, the United Kingdom and the United States.

Each of the major discussion paper themes – EA resources, methodological issues, public participation, strategic environmental assessment, scientific challenges to EA and administrative and procedural challenges to EA, are addressed. Patterns across the jurisdictions are identified and compared against Federal EA requirements and activities in Canada. Key similarities and differences are identified.

Appendix B provides an overview of the EA systems in each jurisdiction. Summary tables (Tables B-1 to B-6) highlight EA challenges and trends, by topic area, for each jurisdiction. An overview of European Union (EU) EA requirements is included in Appendix B to provide a context for the description of the EA systems of the EU members (Netherlands, the United Kingdom, Germany). Norway, although not a member of the EU, adheres to EU EIA Directives.

3.2 EA RESOURCES

Proponent and industry concerns with the cost, timeliness and uncertainties of preparing and reviewing EA documents remain in most jurisdictions. Studies of EA document preparation costs suggest they are limited, usually to less than 1% of project costs. Addressing these concerns has been a priority, especially in the United States. Timing and page limits and systematic scoping procedures are in use in the US.

EA duplication and overlap inefficiencies, among Federal agencies, across levels of government, between program and project level planning and between EA and land use planning, are of concern.

In Australia Federal EIA involvement is triggered by a defined (in legislation) series of national environmental significance tests. Duplication is further minimized through accreditation procedures for state EA requirements, national EIA principles, criteria and standards and national EIA agreements.

Streamlining in environmental and EA approvals is facilitated in the United States through tiering (summaries of pertinent passages of other EA documents or incorporation by reference), functional equivalency (when other environmental requirements are comparable), interagency agreements and task forces (to address disputes and coordinate timetables) and the merging of EIA and other permitting requirements (in such fields as transportation planning, coastal zone management and wetlands management). In additional there is an extensive body of regulations and guidelines concerned with reducing timing and paperwork.

Duplication and overlap is reduced and EA practice is enhanced in the European Union through EA Directives, EA guidelines, review checklists and the extensive use of EA effectiveness studies and audits. EIA and the development consent process is being increasingly integrated in Germany. The integration of EA and environmental and land use policies, plans and programs has been a priority in both Norway and the Netherlands.

Expert EA advice is obtained, by, for example, an EA Commission in the Netherlands. It can call upon up to 200 appointed members (experts) to provide guidance. Other members can be co-opted as needed. Five EIA Centres in the UK provide useful applied research and a sound understanding of EA costs and effectiveness. Similar advice and analysis is provided through a national EIA competence centre at the Norwegian Institute of Urban and Regional Research and through an EIA Association in Germany. A special unit, for addressing social impacts was established, in one Australian state. Although the unit has since been disbanded, it did address an often-neglected aspect of EA practice. The UK Institute for EA and Management, a loose association of consultants, industries and universities, helps further knowledge sharing and now provides EA review services. On-line services, such as the Australian EIA Network and NEPA Net, and national and international EA training programs facilitate EA information sharing. NEPA Net includes laws, regulations, guidelines, data links, environmental organizations, NEPA training and, for some departments, full text and retrieval of EA documents. Some EA training programs make effective use of resource materials such as CD ROMs and interactive case studies. Others are available to universities, to municipal planners and to other EA process participants.

The Agency addresses many resource and efficiency concerns with the measures described in Section 2.2. There remain many opportunities to draw upon the experiences of other countries. Particular pertinent are measures to reduce timing and paperwork, to integrate approvals within and among agencies, to link different forms of environmental planning and management with EA, to share EA knowledge, to harmonize EA requirements and to enhance EA quality and effectiveness.

3.3 EA METHODOLOGY

Several jurisdictions use EA principles and standards to test EA quality and effectiveness. Sustainable development criteria, impact significance criteria, document content requirements and environmental quality objectives have been incorporated into EA legislation and regulations.

Guidelines address good practice. Often they include checklists, rating systems, EA acceptability criteria, operational review criteria and screening criteria.

EA guidelines include manuals, leaflets, sourcebooks, CD ROMs, circulars and newsletters. They address both general and specific requirements or suggestions. They encompass such EA process activities as screening and scoping (the US, Germany, Netherlands), information assessment (UK), forecasting (Germany, Netherlands), evaluation (Netherlands, UK), significance interpretations (US, Australia), mitigation (US, Netherlands), monitoring (Netherlands, US), public consultation (Germany) agency consultation (US) and interdisciplinary analysis (US). They help integrate social and environmental concerns and related fields such as cumulative effects (US, Norway, Netherlands, UK), pollution prevention (US), biodiversity (US, Norway, UK), environmental justice (US), social impacts, risk assessment (US, UK), spatial planning (Netherlands, Norway, UK), health (UK) and life cycle assessment (US) into EA.

Several technical guides facilitate documentation. They address report writing (US), mapping (Germany, Netherlands), electronic publishing standards (US), the use of geographic information systems (GIS) (US, Netherlands) and glossaries (US). Many guidelines concern specific project types, such as mining (Australia, US) highways (Netherlands, UK, US, Germany) and pipelines (Netherlands, UK). Others address specific environmental components, such as nature conservation (Germany, UK) and issues areas such as the integration of EIA into local land use and development planning (Germany, Norway, Netherlands, UK). Some guidelines adapt EA requirements to particular settings. The Antarctic is an example (US). Others are oriented to specific participant groups such as Indigenous peoples (Australia) or to emerging issues, such as transboundary effects (US, Germany) and privatization (US).

The more systematic integration of knowledge, derived from EA practice and applied research, is receiving greater emphasis. This orientation shift is being addressed by EA effectiveness studies, by EA audits of both the process and of actual project-related, environmental consequences and by applied research studies. A novel approach, adopted by one US department (the Department of Energy), is the quarterly documentation of what worked and what didn't work in the EA process.

As detailed in Section 2.3, the Agency has extended and refined the methodological foundation for Canadian EA practice on several fronts. The Agency efforts parallel many of those in other countries. The experiences of other countries, in formulating EA performance standards

and in addressing impact analysis and prediction, impact management, pollution prevention, environmental justice, social impact analysis, transboundary impact assessment, are especially relevant to Canadian EA practice. These issue areas have yet to be addressed through Federal EA guidelines. All are emerging areas of concern in EA practice, are likely to apply when both the Federal and provincial governmental levels are involved in reviewing the same project and pertain to matters that link EA to other areas of Federal environmental responsibility. Further insights are likely from guidelines for best EA practices, specific project types and specific environmental settings. Documentation guidance, especially concerning report format and style, electronic publishing standards, mapping, the use of GIS and glossaries, should be instructive. The pooling of national and international knowledge, concerning EA auditing methodology and outcomes and regarding applied lessons from EA practice, should be a priority. It will likely contribute directly to enhanced EA practice.

3.4 PUBLIC PARTICIPATION

International EA trends and patterns are mixed. Formal public notification and involvement opportunities vary greatly among the jurisdictions. An ideal EA planning would provide for public involvement at every decisionmaking stage - screening, scoping, draft report analysis and review, final report analysis and review, public hearing and monitoring. Appeal provisions would be provided for major decisions. Most jurisdictions fall well short of the ideal, especially for the more limited forms of EA. There remains considerable proponent discretion. Participant and intervenor assistance and funding are rare. The range of consultation techniques has not changed appreciably in recent years. Public consultation tends to have limited decision-making influence, from the perspective of many non-government organizations (NGOs).

EA, especially for controversial projects, usually exceeds the legal requirements. EA decisionmaking is increasingly collaborative. Earlier and on-going involvement, by directly affected individuals, NGOs and the public, is increasingly evident. Greater use is being made of alternative dispute resolution. Government WEB sites and project registries increasingly enhance public understanding and access. Outreach initiatives, for traditionally underrepresented groups, such as Indigenous peoples and low-income groups, are more in evidence. Increasingly there are requirements to respond to identified concerns in writing. Project committees are more common. Strategies for involving Indigenous peoples are increasingly being formulated. Stakeholder directories have

been compiled. Role playing exercises are being used more often. Many of these initiatives were described as successful.

Canadian Federal EA public participation approaches (as described in Section 2.4) generally exceed those of other jurisdictions. Public involvement, at the Federal level in Canada, tends to be highly discretionary for screenings. Public review is mandatory for comprehensive study reports.

Public participation, at the Federal level in Canada, tends to occur late in the EA process. The experiences of other jurisdictions, in undertaking earlier and more collaborative public consultation, could be insightful. Earlier and more collaborative public consultation in EA can ensure a more direct and substantive public contribution to EA decision-making at a stage when there are only limited "sunk costs". In addition, it can be more conducive to public acceptance and support. Also relevant are examples of procedures to involve traditionally under-represented groups. Guidelines to address social justice concerns, in the United States suggest a range of measures to facilitate the involvement of minorities, the poor and Aboriginal people.

3.5 STRATEGIC ENVIRONMENTAL ASSESSMENT

SEA is well established in all the jurisdictions. SEA forms vary among jurisdictions and government levels. Pro-forma requirements for considering environmental concerns in policies are diminishing. More precise guidance, with an active review role by environmental departments and /or other third parties, is more in evidence. Norway has extended the process to budgetary decisions.

SEA tends to apply to programs and plans with locational decisions or area or site-specific environmental consequences. Program-level SEA provides a useful context for project-level EA. It facilitates the integration of environmental approval requirements within and among government departments. SEA is more conducive to the consideration of cumulative effects. It helps address effects from multiple-interrelated projects within, for example, the same watershed.

Integrating EA principles into regional and local land use and development planning is receiving greater attention. Often senior governments use best practice guidelines and applied research studies to encourage the application of SEA principles and practices. Implementation tends to remain at the regional or local level. Integrating environmental concerns

into regional and resource planning is not always the outcome of a deliberate SEA initiative.

Greater use is being made of SEA, or its equivalent, in these jurisdictions. Results have generally been positive. Public participation, the treatment of alternatives, monitoring and implementation remain problematic but are being addressed through additional and revised guidelines and modifications to EU Directives. SEA application is inconsistent. A standardized SEA approach may create even more problems. The proposed EU SEA Directive has met with considerable resistance but appears to be proceeding. The UK gradually integrates SEA principles into existing programming and planning procedures. This approach may be more likely to succeed. Norway's approach of stakeholder seminars and deriving lessons from systematic case studies of SEA practice also could facilitate implementation. Integration issues, among disciplines, sectors, government levels and departments and between spatial and environmental planning, are far from fully resolved. The links, between SEA and sustainability assessment, pollution prevention, eco-management and auditing, have begun to be addressed.

The application of some form of environment review, in conjunction with regional development funding decisions in Europe, parallels a similar pattern with international development agencies. Agencies, such as the World Bank, are now stressing the desirability of SEA.

Canada has launched several initiatives to assess policies, programs and plans, as detailed in Section 2.5.The Federal process for reviewing policies (Cabinet Directives) is similar to the procedures used in other jurisdictions. A more detailed comparison might suggest ways, in which the procedures, for both preparing the assessments and for auditing their effectiveness, could be further enhanced.

The environmental evaluation of programs and plans in Canada falls short of European and American approaches. Those countries use more thorough, rigourous and open procedures. The SEA option, in the *Proposed Environmental Protection and Biodiversity Act* in Australia, is an interesting innovation. If applied in Canada a SEA, under the Act, could be conducted for a Federal program or plan, with potentially significant environmental consequences. The EA requirements, under the Act, are more comprehensive, explicit, open and action-forcing, than the more informal procedures that tend to apply to policies, programs and plans in Canada. American programmic impact statements could be instructive. The gradual and voluntary SEA approaches adopted in the UK and in Norway are worth considering because of the resistance to formalized SEA requirements that is likely to occur both within Federal departments

and at the provincial level. Lessons, derived from case studies and good practice guides, are less likely to meet with resistance. A gradual approach also is more conducive to progressively building expertise, to enhancing methodology and practice, to targeting programs of greatest environmental concern, to adjusting requirements to program-type and individual circumstances and to avoiding costly errors and false starts.

A Federal role in the environmental assessment of regional, land use and development plans is questionable. This responsibility rests primarily with provinces, territories and municipalities. The guidance for such activities, provided by the senior governments in the UK, Germany and Norway, could be considered.

3.6 SCIENTIFIC CHALLENGES TO EA

All jurisdictions identified several challenges. Examples include sustainability, transboundary impacts, biological diversity, cumulative effects, climate change, human health and ecological risks and environmental quality effects. Often these issues are raised in the course of project-level EA review as environmental review agencies seek to bridge their EA review responsibilities with their broader environmental responsibilities and policies. Each jurisdiction is struggling with the role that an individual EA can and should assume in addressing these broader environmental concerns. Guidelines and applied research initiatives are helping guide the incorporation of such concerns into EA planning processes and documents.

Not surprisingly shoreline nations were especially concerned about marine environments. Highly urbanized nations were more concerned about resource depletion, waste management and urban nuisance effects such as noise and air pollution. Concerns raised selectively, but of potentially broader significance, included threatened and endangered species and habitats, the treatment of Arctic and Antarctic ecosystems, environmental justice and the separation of spatial and environmental planning.

The Agency has demonstrated its concern with many of these challenges, most notably sustainability, biological diversity, transboundary impacts and cumulative environmental effects. Sustainability is the subject of an Agency strategy. Biological diversity and cumulative effects are addressed through EA guides. Transboundary impacts is a central issue in various international and national EA harmonization initiatives.

Examples of potentially relevant scientific challenges, identified by other countries, include; the prediction and management of effects in coastal marine environments, links between EA and measures to protect threatened and endangered species, communities and ecosystems, the greater integration of Federal EA and environmental quality protection requirements and the integration of the Precautionary Principle into EA practice. Many Federal EA projects are located within or near coastal marine environments. Endangered species, communities and ecosystems are a major concern of Environment Canada in its review of EA documents. If the Federal government proceeds with endangered species legislation, a law list trigger linking the legislation to the Act will likely be raised as a possibility. EA jurisdictions, both within and outside Canada, are increasingly addressing the issue of if and how best to merge or link EA with other environmental requirements. The emerging issue of risk and uncertainty management in EA practice, especially when the consequences of being wrong are severe, is contributing to calls for integrating a "precautionary approach" into EA and environmental quality legislation and management. It is likely that this issue also will be raised in Canada.

3.7 ADMINISTRATIVE AND PROCEDURAL CHALLENGES TO EA

Most jurisdictions seek to balance EA efficiency and effectiveness. Procedural streamlining and focused documentation have facilitated efficiency. More direct links between EA and decisionmaking, an increased role for the public, enhanced EA quality, a more direct contribution by EA to sustainability and enhanced implementation have helped enhance EA effectiveness. Specific problem areas are being identified through monitoring, auditing and EA effectiveness analyses.

There has been a shift away from simple procedural direction. Instead, integration among disciplines, between EA and other forms of environmental management, across sectors, within and among agencies, government levels and countries and between the public and private sectors is receiving greater emphasis. Increased stress is being placed on the integration into EA of life cycle assessment and of related forms of analysis, such as economic, risk, social and ecological analyses. Specific social concerns and priorities, including those of Indigenous peoples and related to social justice and privatization, are receiving additional attention. The need for methodological advances, to better conduct place-based analyses, is a priority, particularly with reference to the increased use of GIS. Cumulative and transboundary impacts also are priorities.

Many of these issues have been identified and are being addressed by the Agency, as described in Section 2.6. Other potentially relevant challenges include; integration with other forms of environmental planning and management (including the merging of approvals), the integration into EA of social justice concerns, addressing the implications of economic trends such as privatization for EA and the need to enhance EA methodology to make better use of information technologies and to better address transboundary impacts.

4 CONCLUSIONS

The conclusions for the national and international EA analysis are presented below. Reference should be made to Sections 2 to 3, together with Appendices A and B, for the detailed analysis.

4.1 DOMESTIC ANALYSIS

The Agency will, and should continue, to assume a leadership role in;

- facilitating EA efficiency and effectiveness;
- in advancing EA methodology;
- in the use of participant funding;
- in policy-level EA;
- in considering the EA implications of scientific challenges to EA; and
- in addressing selective administrative and procedural challenges, most notably those associated with EA harmonization.

Many of the EA trends and challenges, identified in the domestic analysis, are being addressed jointly by the two levels of government.

EA practice, at the Federal level, could benefit further from the expertise and experience of the provinces and territories, in;

- *Scoping and procedural streamlining* – Several provinces (Newfoundland, Ontario, Saskatchewan are examples) have instituted, or are proposing to institute, measures to facilitate EA document review and to contribute to the more efficient and effective use of available resources. These measures, and related experiences, could prove instructive if similar initiatives are launched at the Federal level.
- *Preparing project-type guidelines* – Quebec, Alberta, Saskatchewan and Ontario have prepared project-type guidelines that could be adapted for application to Federal projects. The recent series of guidelines prepared in Quebec are likely to be especially relevant.

These documents have apparently expedited EA review for many projects;

- *Preparing project-specific guidelines* – Most provinces have considerable experience with preparing project-specific guidelines and terms of reference. A review of these documents is likely to be instructive in differentiating between concerns suitable for generic guidelines (of the type prepared by the Agency) and concerns better addressed through project-specific guidelines;
- *Adapting EA methodology to suit area and project-specific conditions* – Many provinces and territories indicated that approaches for addressing such concerns as cumulative effects and biodiversity in EA necessarily vary greatly from project-to-project and from region-to-region. A greater appreciation of such differences could enhance Federal EA approaches to guiding and assessing the treatment of such concerns;
- *Evaluating EA documents against environmental quality, resource and land use planning standards, programs and plans* – EA practitioners, at both the Federal and provincial levels, have struggled with how best to apply environmental policies, programs and plans in EA review. Provincial and territorial experiences, in such jurisdictions as BC, Nova Scotia, Saskatchewan, Manitoba, Quebec and all three territories, are likely to be helpful for similar initiatives at the Federal level. In British Columbia, for example, a large number of technical guidelines, manuals and criteria, prepared through the Resource Inventory Committee, are contributing to more consistent EA data collection, analysis and interpretation.
- *Linking EA to related forms of environmental management and planning* – Saskatchewan is, for example, seeking new and innovative approaches to integrating EA with related forms of environmental planning and management, such as its Ecosystem-Based Management Plan of Action. EA requirements and administrative arrangements in the territories provide for direct interconnections among EA, resource management and land use planning. These initiatives could provide useful insights if similar initiatives are instigated at the Federal level.
- *Addressing such concerns as human health effects, risk assessment procedures and environmental management* - A task group in Quebec is considering human health EA methods. Worthwhile experience in the integration into EA of risk assessment methods has been acquired in Ontario, Alberta and Quebec. Innovative approaches to applying and enforcing EA mitigation, monitoring and contingency measures (through, for example, environmental protection plans) have been introduced in such jurisdictions as Nova Scotia, New Brunswick, Quebec and Newfoundland. These concerns often arise with Federal EA projects;

- *Facilitating early, on going and interactive public participation* – There is a long tradition, with most provinces and territories, of ensuring two-way information sharing, of providing numerous public consultation opportunities and of sharing decision-making in EA practice. This public consultation approach is reflected in general EA guidelines (in Ontario, Saskatchewan, BC and Quebec for example) and, more often, in project-specific guidelines. More importantly, the provinces and territories have a wealth of experience in adapting, refining and applying public information and consultation techniques, especially more interactive procedures such as public advisory committees. Experiences with co-management and decentralized decision-making in the territories also are likely to be instructive. The Federal government could draw upon this knowledge base as it seeks to enhance the public role in Federal EA requirements and procedures for both screenings and comprehensive studies.
- *Facilitating transparent planning and decision-making* –Decision-making, after EA document submission in most Canadian jurisdictions is often not fully transparent. Few projects are subject to public hearings and the rationale provided for decisions can be limited. Decision-making is more transparent in jurisdictions, such as Alberta and Quebec, where a higher proportion of projects are reviewed by hearings boards. Varying approaches for ensuring a clear documentation of responses to agency and public concerns and for providing a clear rationale for EA decisions are worthy of consideration. The issue of transparent EA decision-making is a concern also likely to be raised at the Federal level.
- *Integrating environmental and sustainability principles into government programs* – Both governmental levels have sought to more systematically integrate explicit and substantive environmental and sustainability principles and criteria into the assessment of projects and alternatives in EA practice. The Federal government could benefit from provincial and territorial experiences in this area. The experience in Manitoba is likely to be especially insightful. It has recently passed a *Sustainable Development Act* and is considering the possibility of sustainability assessment requirements. Also of relevance, Quebec is actively considering alternative approaches to undertaking SEA.
- *Addressing regional environmental challenges* –There is an understandable tendency, at the Federal level, to focus on national and international environmental issues and their EA implications. Provinces and territories are likely to be more aware of regional environmental issues that could be relevant to projects subject to Federal EA requirements and to projects involving both levels of government. In such cases there needs to be a sensitivity to both types of environmental challenges;

- *Adapting procedures, for addressing scientific challenges, to regional, local and project-specific characteristics* – There may be a tendency at the Federal level, to adopt a "one size fits all" approach to addressing national and international scientific challenges. The provinces and territories can provide the valuable regional, local and project-specific knowledge required to adapt and adjust Federal EA initiatives that address such challenges and to refine Federal review comments; and
- *Adapting EA approaches to sensitive, complex and uncertain environments* –Decisions regarding project acceptability and the choice and application of forecasting and impact management measures can vary dramatically depending on the environmental risks and uncertainties associated with specific regional and local conditions. Often provincial and territorial governments have an extensive knowledge base of such conditions and can assist in interpretations of impact significance, project acceptability, the likelihood of mitigation effectiveness and the potential environmental consequences if forecasts prove inaccurate or if mitigation measures prove ineffective.

4.2 INTERNATIONAL ANALYSIS

EA, at the Federal level in Canada, is generally at a comparable or better level than the other jurisdictions considered in:

- The resources devoted to EA;
- Addressing such methodological concerns as cumulative effects, impact significance interpretations, biodiversity and the assessment of cultural and heritage impacts;
- Providing procedural guidance;
- Providing EA information through public registries and government web sites;
- Public consultation requirements;
- The provision of intervenor funding;
- Adapting EA requirements and procedures for Indigenous peoples;
- Undertaking policy-level EA and regulatory assessment;
- Responding to most scientific challenges to EA; and
- Addressing many of the procedural and administrative challenges identified by other jurisdictions.

EA practice, at the Federal level, could benefit further from international experience and expertise in;

- *Scoping, increasing efficiency, integrating approvals and linking EA to other forms of environmental planning and management* – The United States has devoted considerable attention to how best to focus and streamline EA documents and review procedures. The integration of EA and other forms of environmental management and control has been an ongoing concern in all the international jurisdictions considered. These issues have been addressed through guidelines, administrative arrangements and regulations. These documents and arrangements could be reviewed if the Federal government wishes to devote additional attention to these concerns.
- *Conducting EA effectiveness analyses, auditing procedures, applied research and other procedures for integrating practice-based knowledge;* These types of measures are essential if the quality and effectiveness of EA legislation, regulations, guidelines and documents is to be assessed, monitored and enhanced. Numerous examples of such initiatives have been instigated in, for example, the UK, Australia the Netherlands and Norway. A critical role, in performing such analyses, has been assumed by such bodies as EIA Centres (in the UK), a conservation council (in Australia), a research institute (in Norway), an environmental commission (in the Netherlands) and an EIA Association (in Germany). An interesting US innovation (the US Department of Energy) is a regular newsletter addressing what does and does not work in EA. The Agency could review the institutional arrangements for conducting such analyses, the knowledge acquired and the methods used as it seeks to enhance EA quality and effectiveness in Canada.
- *Providing guidance for addressing impact analysis and prediction, impact management, environmental justice, social impact assessment and transboundary assessment* – These EA concerns have been addressed through guidelines and applied research in Germany (impact analysis and prediction, transboundary impacts), in the UK (monitoring, information evaluation), in the Netherlands (post-auditing, forecasting methods, monitoring), in Norway (transboundary impacts) and in the US (social impact assessment, environmental justice). These concerns have yet to be addressed through Federal EA guidelines but are likely to be emerging issues in EA practice.
- *Providing EA documentation guidance, especially concerning report format and style, electronic publishing standards, mapping, the use of GIS and glossaries* – EA document style, content and length, together with guidance regarding mapping, graphics and electronic publishing, have only received limited attention in Canadian EA guidelines and requirements. As a result, there tends to be a wide variation in documentation organization and presentation, which can inhibit review, understanding and the consistent application of EA quality standards.

The Agency could benefit from international experience in this area, especially from the US, the UK and the Netherlands.

- *Facilitating earlier and more collaborative public involvement and involving traditionally underrepresented groups* – Earlier public involvement, with an emphasis on collaboration, can facilitate public understanding, public input to planning and decision-making and (sometimes) to public acceptance and support There appears to be a trend toward such approaches in the jurisdictions considered. Sharing experiences in this area may benefit Federal EA practice. A major focus in US EA practice, in recent years, has been environmental justice, especially in the sense of equitable (both procedurally and in terms of outcomes) treatment of Aboriginal peoples, minorities and the economically disadvantaged. US EA guidelines, that address these concerns, may be helpful when such concerns are raised for Canadian EA projects.
- *Auditing, guiding and enforcing the integration of EA into policy, plan and program-level decisions*- All of the international jurisdictions analyzed have advanced further than Canada in the field of SEA. A variety of approaches has been adopted to help integrate environmental concerns into policies, plans and programs. Jurisdictions, such as the UK and Norway, that incrementally integrate environmental concerns into existing structures and procedures, may offer insights concerning how to introduce SEA approaches and methods with a minimum of disruption;
- *Integrating the SEA option into EA legislation*- It may be useful to have SEA as an option within existing EA legislation. This approach provides reviewers with the choice of requiring an EA when, for example there are multiple, small projects, in an environmentally sensitive region such as a watershed or a program will result in several facilities being established over a wide geographic area. In such cases, SEA becomes a tool available to EA administrators. This approach has recently been adopted in Australia. It has been available for many years in the United States. The flexibility to apply the Act to programs and plans, at the Federal level in Canada, would offer greater flexibility in the administration of EA requirements.
- *Conducting applied SEA research*- Many concerns and objections tend to be raised regarding whether SEA is desirable and how it might be undertaken. Jurisdictions, such as the Netherlands, the UK, the US and Germany, have considerable experience and expertise in SEA. Much can be learned from their experiences. SEA research programs, undertaken on behalf of the European Union and the government of Norway, could be especially instructive.
- *Integrating SEA principles and practices into programs and plans* –The state-of-the-art and practice of SEA, in the jurisdictions considered,

has advanced to the point that broadly applicable principles and criteria have been identified. It is likely that these principles and criteria could be applied in a Canadian context as governments seek to more systematically integrate environmental concerns into policy, plan and program-making processes, regardless of whether SEA is formally introduced.

- *Formalizing the analysis of potential environmental effects associated with draft legislation and public investment plans* –A few jurisdictions, including, for example, the Netherlands and Norway, formally assess the environmental effects associated with draft legislation and public investment plans. The approaches applied in these jurisdictions could be compared to those used in Canada. Insights could be obtained that could contribute to refinements in Canadian procedures.
- *Providing SEA guidance and assistance to other governmental levels* – Jurisdictions, such as the UK, the US, Germany, the Netherlands and Norway provide SEA guidance and assistance to other governmental levels. The guidance documents, prepared by these governments, could be instructive in the event that the Canadian government decides to assume such a role.
- *Addressing the links between EA and threatened and endangered species, communities and ecosystems legislation and programs* - The new (proposed) EA legislation in Australia is part of a comprehensive bill – *The Environmental Protection and Biodiversity Bill*. The Bill explicitly considers links between EA and the protection of sensitive and significant species and ecosystems. The Australian approach may provide some useful insights if and as Canada proceeds with endangered species legislation.
- *Integrating life cycle assessment, eco-management and auditing and the precautionary and pollution prevention principles into EA* – Increasing consideration is being given to links between EA and;
    - The environmental assessment of products, using, for example, life cycle assessment (life cycle assessment is a concept and method with the potential for broader application in EA practice);
    - Post-approval environmental management (both at a project and an environmental systems level);
    - Procedures for assessing (using auditing procedures) the quality and effectiveness of EA requirements, administrative arrangements, guidelines and impact management procedures;
    - Approaches (as exemplified by the precautionary principle) for addressing risks and uncertainties in conditions where severe environmental consequences may occur if predictions prove inaccurate or if mitigative measures prove ineffective;

- Principles (such as pollution prevention) currently being applied in environmental quality strategies and requirements.

The links between EA and life cycle assessment and between EA and environmental quality requirements have been addressed through applied research undertaken on behalf of the US Environmental Protection Agency. The Netherlands has devoted considerable attention to the links between EA and eco-management and auditing. The application of the precautionary principle to EA has received some preliminary attention in Australia. These initiatives are potentially relevant to Canadian EA practice.

- *Addressing the implications for EA of economic trends such as privatization.* – Many capital projects, traditionally undertaken by the public sector, are now contracted out to the private sector. This trend could have implications for whether EA requirements are applied and in what manner. This issue is being explored in the United States. US initiatives in this area may provide insights of value to Canadian EA practice.

APPENDIX A

Provincial and Territorial EA Systems

This Appendix describes the characteristics of EA systems in each of the ten provinces and three territories. Tables A-1 to A-12 (included at the end of Appendix A) highlight EA challenges and trends, by topic area, for each jurisdiction.

Newfoundland

The *Environmental Assessment Act* for Newfoundland and Labrador became law in November 1990. The Act requires that projects that may impact the environment be registered with the Department for examination. The review may be very simple if no significant environmental effects are anticipated. If significant impacts are likely, an Environmental Impact Statement and / or public hearing may be required. Schedule A to the Act lists undertakings subject to registration (largely projects and some resource management activities). Exceptions also are listed. Schedule B identifies Special Areas (compiled in a Land Use Atlas) where undertakings are automatically registered. A Registration Format also is included.

Major steps in the process (most with time limits) include:

- Registration;
- Examination by government departments (coordinated by EA Division)(also available for public review and comment);
- Minister's Decision (undertaking may proceed, or Environmental Preview Report (EPR) is necessary or an Environmental Impact Statement (EIS) is required); the EPR provides sufficient information to determine if an EIS is necessary);
- Proponent's action (if an EIS is necessary, a draft "Terms of Reference"(TOR) is prepared (content requirements specified); draft TOR is reviewed by the Assessment Committee (Federal and provincial representatives) with provision for public review and comment; separate TOR may be required for component studies; once TOR approved work commences; public information program required);
- EIS Review and decision (review of EIS by Assessment Committee; EA Board if strong public interest of concern; final decision by Cabinet).

The Act includes broad definitions for the environment, for alternatives and for undertakings. The undertaking definition includes, for example, projects, plans, programs and policies but the Act has rarely been applied beyond projects. Regulations to the Act provide additional details regarding requirements and Schedules A and B.

The Department has prepared a general procedural guide. Weekly EA bulletins are available on the government web site.

A White Paper on Proposed Reforms to the EA Process was released in October 1995. The *White Paper* was the outcome of an extensive consultation process and includes a wide array of proposed reforms, together with a draft bill. Many of the reforms are intended to streamline the process. Examples of the reforms proposed, of relevance to this paper, include:

- Trigger only when environmental impacts significant and harmful;
- Policies, plans and programs are to be excluded;
- Excluded where permits are sufficient or only land use issues are involved;
- Inclusion of class EA provisions;
- Provision for rejection of project at the registration stage or release of a project after the registration stage;
- EPR to address data gaps with existing baseline information and EIS can focus on selected environmental impacts;
- Conditions can be imposed at any stage;
- Departments limited to issues within their mandate;
- Effectiveness of mitigative measures is to be monitored;
- Positive socio-economic impacts are to be considered;
- Screening criteria are to be adopted;
- Generic data collection and analysis files to be made available to the public;
- Communications strategy by Department;
- Generic EA project file information available to public;
- Round Table on Environment and Economy to suggest how to strengthen EA involvement;
- Provisions for public review of revised EPRs and EISs and conditions included in EA Bulletin; and
- Various other procedural requirements including additional time lines.

The *White Paper* is still pending. Most of the recommendations still apply. The narrower definition of the environment is no longer being considered. The environmental atlas trigger is being dropped (except for salmon rivers) as such concerns can be addressed in other ways. The report is

still being considered at the committee level but has not been a Cabinet priority.

The Act was amended in 1997 to permit cost recovery. Additional changes are expected, possibly this year, as a result of land claims agreements. Further changes may be necessary because of the EA Subagreement to the Harmonization Accord. This matter is currently under review by a joint management group. The changes should be limited because the agreement largely reflects current practice.

New Brunswick

New Brunswick adopted a Cabinet policy on EIA in 1975 for major government development proposals. The statutory framework for EA was established through amendments to the *Clean Environment Act* and adopted in 1986 after extensive public consultation.

Major features of the New Brunswick EIA regulations (time requirements for several of the steps) include the following:

- Applies to public and private undertakings (listed in Schedule A) (mainly projects but does include a few activities, such as non-indigenous species introduction and water basin transfers; also any undertakings affecting unique, rare or endangered environmental features or wetlands over a certain size);
- Undertaking definition include programs (subject to limitations noted above);
- Requirement to register with the Ministry of the Environment (registration form provided by Department);
- Minister determines if an EIA is required (written public notice) or not (public registry of screening decisions) (may include terms and conditions);
- If EIA study required Ministry appoints Review Committee (may include Federal, provincial and municipal representatives);
- Draft guidelines prepared by Ministry (available for public review); once guidelines finalized, proponent prepares Terms of Reference;
- Proponent prepares draft EIA report (considered by Review Committee) (public review if Minister considers report is adequate) (additional work may be required);
- Once Report accepted by Minister provision for public review of Report, Report summary and General Review Statement (requirement for advertised public meeting); public inputs from meeting consolidated and summarized;
- Final decision by Minister (can include terms and conditions); and
- Process administered by the Department of the Environment.

A general procedural guide is available from the Department of Environment (also available at Department web site). The project guidelines address both general and project-specific requirements (e.g., methods, study conduct, report content, significant issues to address).

A position paper was released in December 1993 that proposed several reforms to the EIA system in New Brunswick. Major proposed reforms include:

- Several measures to enhance public involvement (e.g., public notification of part of public notification, public input to screening decisions, greater use to be made of informal consultation events such as workshops and open houses, increased opportunities for public discussion at formal public meeting, provision for use of mediation, an independent review body for major undertakings with significant public interest);
- Several measures to address EA efficiency and effectiveness (e.g., EA for all undertakings with environmental implications, a three tier EA process with flexibility to move between tiers, generic guidelines for various project and location types, implementation of land use planning processes, mandatory inclusions and specific exclusions, more specific time frameworks);
- Various implementation-related measures (e.g., proponents to file annual compliance reports, joint monitoring programs with other stakeholders, coordination of compliance monitoring among government departments);
- Provisions for class assessment review;
- Cost recovery provisions; and
- Provisions to assess the environmental impacts of policies and programs (e.g., government departments and agencies to be responsible, a more formal assessment process in conjunction with more effective consultation, Cabinet to remain primary forum).

The Position paper was approved by Cabinet but has yet to be implemented. It was not a high priority and the current system is working quite well. Much has changed since the position paper was released. The proposals would have to be reviewed in light of changes to the *Clean Air Act*, Federal – provincial EA harmonization initiatives and, possibly, the results of the EA standards analysis, being undertaken by the Agency in conjunction with the Canadian Standards Association. Extensive consultation would be required before any changes could be introduced.

Prince Edward Island (PEI)

EA in PEI is addressed in the *Environmental Protection Act (1988)*. The Act indicates that no undertaking shall be undertaken unless a written proposal is filed with the Department and written approval is obtained from the Minister. The Minister, in considering the proposal, can require additional information, require the preparation and submission of an EIA and notify the public of the proposal and provide opportunity for comment. The Minister determines document contents. The Act defines "undertaking" as projects that will or may cause various types of effects or public concerns. Environment is defined broadly and proponents can be public or private.

Interim Guidelines (1989) elaborate on the process. The major steps in the process include:

- Proponent files a written proposal (in accordance with a schedule) (undertakings are listed in a separate schedule);
- Proposals are screening (Department consults with Interdepartmental Technical Review Committee) (Committee includes Federal and provincial departments) (additional information may be requested);
- A decision is made (EIS required or not required);
- If an EIS is required the Departmental staff will prepare project-specific guidelines addressing such matters as issues to consider, general approach and information requirements;
- The Department provides public notice and provides advice regarding how public input is to be sought;
- The proponent prepares the study (project description, existing environment, alternatives analysis, methods to evaluate accuracy of impact predictions, impact management methods);
- The EIS is submitted and reviewed by the Technical Review Committee (additional analysis may be required) (Technical Review Comments are finalized), public notice is given and the EIS and Technical Review Comments are made available for public review and comment (public information meetings may be held);
- An assessment review panel may be convened where there is strong public interest, and;
- The Minister makes the decision (can include mitigation measures and other regulatory requirements).

A *Guideline for Manure Management* (including a description of the EIA process for livestock facilities and manure management facilities) also has been prepared.

Project-specific guidelines address such matters as overall process, alternatives to be considered, project description details, existing environment description, EIA methodology, public consultation and significant issues. Project-specific terms of reference (in response to project-specific guidelines) address such matters as scope of work, EIA methodology, identified valued ecosystem components and report table of contents

There are no plans for changing the EIA requirements and guidelines in PEI. Departmental staff would like to see the guidelines formalized as regulations. They also would like to see a formalized protocol for public notification and time line requirements.

Nova Scotia

EA in Nova Scotia was first addressed through the *Environmental Assessment Act*, passed in 1988. EA Regulations to the *EA Act* were enacted in July 1989. After an extensive process, a new *Environment Act* was proclaimed on January 1, 1996. The *Environment Act* replaced sixteen pre-existing statutes, including the *Environmental Assessment Act*. EA is now addressed through Part IV of the *Environment Act*, together with the EA Regulations and EA Board Regulations. An Operating Approval, under Part V of the Act, is also required after Environmental Assessment Approval has been given before the project can proceed.

The *Environment Act* establishes a context for the EA requirements by identifying general environmental goals and principles. The Act, among other things, also establishes an environmental registry, creates the Nova Scotia Round Table on the Environment and Economy, addresses environmental education and research and provides a detailed environmental regulatory regime (e.g., approvals and certificates, substance releases, dangerous goods and pesticides, contaminated sites, waste-resource management, water resource management, air quality management, inspections and investigations and transboundary pollution).

Major features of the EA requirements of the Act and regulations include:

- Broad definition of environment and environmental effects;
- Broad definition of undertaking (includes policies, plans or programs, with application at the discretion of the Minister);
- A listing of undertakings (Schedule A) for which proponents must register (Class II undertakings require an EA including a public review,

which may include public hearings) (The Minister decides whether an EA Report or a public review (which may include public hearings) are required for Class I undertakings) (the undertakings listed are generally large public and private capital projects but drainage basin transfers and actions that disrupt more than 2 ha of wetland included in Class I list) (Minister has discretion to apply EA process to other undertakings);

- Major steps (several with timing requirements) include:
  - Project registration (public notice) (factors relevant to Minister's decision identified);
  - Focus report may be required (provision for public review of focus report);
  - Minister decides on focus report (approval subject to conditions, EA report required or undertaking unacceptable);
  - Terms of reference for EA report (prepared by Administrator) (general contents specified) (provision for review by public, governments and other jurisdiction);
  - Draft (preliminary and final) and final EA report prepared and reviewed (provision for public review of draft report);
  - Referral to Board (optional for Class I undertakings) (Board may pay witnesses);
  - Administrator summaries comments (including those from the public) and makes recommendations when an EA report is not referred to the Board. The Board prepares a report and recommendations to the Minister where an EA report is referred to the Board; and
  - Minister rejects (with reasons) or accepts (with or without conditions).
- Provision for the use of alternative dispute resolution at any stage
- Provisions for joint assessment / hearings (Federal government, other province, municipality).

Changes, since the passage of the Act, have included a Policy Regarding Applicability of the EA Process to Facilities for the Environmental Remediation of a Site and a *Guide to Environmental Approvals for Cranberry Operations (1997)* (subject to EA approval if involves a wetland site over two hectares). Consideration is being given to adding class environmental provisions to EA requirements. The *Environment Act* is to be subject to a five-year review next year. EA is likely to be a major part of that review. An external advisory committee is being established to conduct the public consultation.

Quebec

EA in Quebec is addresses through regulations to the *Environmental Quality Act (1981)*. One set of regulations addresses requirements in Southern Quebec. Two other regulations focus on the specific requirements in a part of the Northeastern Quebec region and in the Territory of James Bay and northern Quebec. Separate EA guides address EA procedures in southern and northern Quebec. The *Environmental Quality Act (Division IV.1 – Environmental Impact Assessment and Review of Certain Projects)* includes a few, largely procedural, provisions. Detailed requirements are specified in the regulations. Major features of EA requirements in Southern Quebec (with some timing requirements) include:

- Certificate of authorization required for specified projects (largely public and private projects but does include some activities such as dredging and aerial pesticide spraying);
- The proponent files a project notice (in accordance with a project notice form) (describes nature of project);
- Ministry prepares preliminary instructions for EIA preparation; after consulting with government departments and public bodies, the instructions are finalized;
- The EIA must be prepared in accordance with parameters detailed in the regulations (also a requirement for a summary);
- Draft EIA submitted and reviewed for admissibility (additional information may be required);
- If sufficient base for decision-making made public (includes notification requirements and content requirements for file);
- Public or municipality may request a hearing (Minister decides if hearing if requested by public or municipality) (unless the application is frivolous the hearing is held) (sometimes the hearing panel holds mediation sessions);
- Minister undertakes an environmental analysis, in parallel with the public participation phase, and recommends whether the project should or should not proceed;
- The environmental analysis report and hearing board report (if there is a hearing) are used as the basis for the Minister's recommendation;
- The Minister sends the Government a brief and an Order in Council and the Government decides (decision can be with or without conditions); and
- The Ministry and the proponent are involved in the monitoring, control and follow-up stage.

Industrial projects were added to the Regulations in 1996. In 1998 wildlife were removed from the process, except for marsh rehabilitation, and

further refinements were made to clarify the application of the Act to waste management projects

Northern Quebec, for EA purposes, is divided into two areas - the territory subject to the *James Bay and Northern Quebec Agreement (JBNQA)* (both north and south of the 55th parallel) and the de Moinier region. The same EA requirements apply to both areas but there are additional consultation requirements associated with the de Moinier region.

The JBNQA is a wide-ranging pact signed, in 1975, by the Government of Quebec, the James Bay Energy Corporation, the Grand Council of Crees of Quebec, the Northern Quebec Inuit Association and the Government of Canada. The Agreement addresses rights, compensation, land claims, land organization, environmental protection regimes, the participation of native peoples and a variety of other matters. The Agreement also establishes two environmental advisory committees (one for the region north of the 55 parallel and one for the region south of the 55th parallel) and creates three assessment and review committees:

1) The Evaluating Committee (COMEV) (Quebec / Canada / Cree) for projects south of the 55th parallel);
2) The Review Committee (COMEX) (Quebec / Cree) for projects south of the 55th parallel); and
3) The Kativik Environment Quality Commission (Quebec / Innuit) for projects north of the 55th parallel.

In addition, there are provisions for bipartite committees (Federal with Cree or Inuit) for Federal projects. Final decisions are made by the Administrator (varies depending on who is responsible for the project and for the land).

The major steps in the EA process (with time limits) for these areas are as follows:

- Proponent prepares preliminary information (regulations identify requirements) and forwards the information to the Administrator;
- The Administrator forwards the information to the committee responsible. If the project is not exempt, the committee prepares guidelines that are forwarded to the Administrator. The Administrator forwards the guidelines, with or without changes, (if changes are made the Administrator must consult with COMEV) to the proponent).
- The proponent prepares the impact study in accordance with the guidelines (the study objectives and the study components are specified in the regulations) and submits it to the Administrator (a distinction is drawn between a preliminary impact statement and a detailed impact statement) (requirement to include a table of contents and a summary);

- The impact study is reviewed (native administrators and public can make representations to the committee);
- The KEQC decides and the COMEX recommends if the project should or should not proceed, with or without conditions (the COMEX can suggest further study); and
- The Administrator grants or refuses project authorization (must consult with committee is cannot accept recommendation or decision) and must inform native administrations.

The Regulations specify projects (all large projects) that are automatically subject to the procedure. Projects automatically exempt from the procedure also are identified. With projects in the de Moinier region, there are additional provisions related to providing the EIA to the Naskapi Village Corporation. The latter must transmit its comments and, where applicable, hold a public hearing.

An overview of the environmental impact assessment and review procedure (for southern Quebec) and a general guide for environmental impact studies (both prepared in 1982) are available in addition to the more recently completed (1994 and 1996) guides for northern and southern projects respectively. A series of project-type EA guidelines have been published (more are being prepared), between January 1997 and January 1999. These project-type guidelines have proven very helpful in expediting the review process. Guidelines on public consultation methods are being finalized. Guidelines for consultation with Cree and Innuit peoples will likely be necessary in the near future.

A major amendment to the *Environmental Quality Act* was introduced in 1992, concerned with the application of EA requirements to plans and programs, but was not implemented. Other approaches to strategic environmental assessment (SEA) are now under active consideration. A major review of SEA experience was completed in 1998. A proposal to modify the application of aerial spraying to forests also is under consideration. EA is a component of global land claims negotiations currently in process.

No further reforms to Quebec EA requirements are anticipated in the near future.

Ontario

The *Environmental Assessment Act* was first passed in 1975. Since that time there have been significant changes introduced in the form of both

amendments to the Act (Act now entitled *Environmental Assessment and Consultation Improvement Act)* and regulations. Also, many guidelines have been prepared.

Major characteristics of EA requirements in Ontario include:

- A broad definition of the environment;
- Primarily public undertakings (public bodies identified), except for certain private waste management facilities and individually designated private undertakings (several exemptions identified);
- Provisions to harmonize with other jurisdictions;
- Provisions for class assessments;
- Mediation option in the process;
- Major stages (several with deadline requirements);
    - Proponent applies to Minister for approval (usually there is an initial circulation of the project description);
    - Proponent prepares and submits a terms of reference (TOR) (content requirements including description of consultations undertaken)(proponent obliged to consult with interested parties) (Minister approves TOR) (EA to be prepared in accordance with the TOR);
    - Proponent prepares and submits EA (general content requirements) (obligation to consult public during EA preparation);
    - Ministry reviews EA (Minister identifies deficiencies, proponent has opportunity to remedy, Minister may reject if not satisfied, notice of review completion);
    - Provisions for public notice and inspection of EA;
    - Minister makes a decision (approve undertaking, approve undertaking with conditions, refer all or part of application to EA Board or to another tribunal or entity, defer part of decision, reject undertaking, vary, approve or reject Board decision) (areas that could be addressed by conditions identified) (matters to consider when making decision specified) (individuals can request Board referral) (also allows for reconsideration of decisions).
    - Addresses proposed changes to an undertaking, the replacement of an EA, activities permitted before approval and proceedings under other Acts;
    - Includes EA Board provisions and Separate deadline regulation.

Many EA guidelines have been prepared in Ontario, over the past twenty years. They address such matters as general procedures, methods and document content, public and agency consultation, EA Board hearings, the assessment of waste management projects, the assessment of cultural and land use impacts and the use of terminology. New guidelines for the preparation of Terms of Reference and public consultation are

under preparation. Further guidelines will be prepared to reflect recent changes to EA legislation and regulations. New regulations are being prepared to address waste management project triggers. There is a general move in the direction of EA by project type, rather than by proponent type, but the application of the Act to private sector undertakings is likely to remain discretionary. Policy guidance regarding the application of the Act to private, as compared to public proponents, is needed.

Manitoba

EA requirements in Manitoba are addressed through the *Environment Act* and regulations. The *Environment Act* became law in 1988. The *Manitoba Environment Act* outlines an environmental assessment and licencing process for those developments that may have potential for significant environmental effects.

Regulations to the Act list developments requiring an EA and a License prior to construction. Three classes of development are identified - Class 1 (many pollution-related), Class 2 (activities with significant environmental impacts caused by factors other than pollution or in addition to pollution) and Class 3 (a small number of large scale projects). The developments listed are largely projects but some activities are included (e.g., controlled burns of 100 ha or more, various water development and control activities).

Other major characteristics of the Act and regulations include:

- Development definition includes projects and activities that cause or are likely to cause various types of environmental effects;
- Provisions for agreements with other jurisdictions (includes joint EA panels);
- Provisions for participant and intervenor funding by proponents;
- Public registry of proposals;
- Major process steps (includes timelines for several steps):
  - Listed developments file a proposal (in accordance with a regulation);
  - Proposal is screened by the public and by a Technical Advisory Committee (TAC) (class determined) (If Class 1 may require a contaminants study and possibly a public hearing or may proceed directly to licencing) (If Class 2 or 3 may require Guidelines for a full EA, an EA and possibly a public hearing);
  - Further information may be required (direct questions or guidelines) (further information is screened by public and TAC);

  - The Minister may call for a hearing by the Clean Environment Commission (Commission provides advice and recommendations and Minister decides) (Commission can engage in mediation activities);
  - Licensing decision (refuse a Licence or issue a Licence with limits, terms and conditions); and
  - Decisions under the *Environment Act* can be appealed to the Minister (through the Minister to Cabinet for Class 3 developments).
- Provisions for cost recovery of hearings costs.

A general procedural guide and a public consultation guide have been prepared.

EA, within the broader umbrella of sustainable development (SD), has been the subject of a major reform initiative in Manitoba. The reform process, initiated by the Manitoba Round Table on Environment and Economy, culminated in 1996 in a *White Paper on the Sustainable Development Act*. The *White Paper* proposed:

- The formal establishment of the Manitoba Round Table on Environment and Economy;
- The enshrining of SD principles and guidelines into Manitoba law;
- A requirement for the government to establish SD Strategies and to produce a Provincial Sustainability report;
- An onus on government to ensure that SD principles are integrated into all Manitoba's laws;
- The creation of tools (e.g., a provincial SD development code of practice, a budget checklist, procedural guidelines) to ensure that SD is part of every aspect of government operation;
- The creation of an efficient, service-oriented, SD approach to development licencing ("one-stop shopping", pre-licence planning, all land use approvals at same time, appeal procedures for land use decisions);
- A consolidation of hearings and appeals of development reviews (land, resource use, EA) under the independent Commission for Sustainable Development; and
- Of particular relevance to EA, the proposed process provides for sustainability assessment, category reviews and dispute resolution.

Some of the *White Paper* recommendations were incorporated into the *Sustainable Development Act (1997)*, including:

- The establishment of a Manitoba Round Table for Sustainable Development;
- The enumeration of SD principles;

- A requirement to establish a provincial SD strategy;
- A requirement to establish a system of SD indicators;
- Various requirements related to public sector operations (e.g., provincial code of practice, financial management guidelines and reporting);
- The establishment of an SD innovation fund; and
- Attached schedules with SD principles and guidelines.

The recommendations, contained in the balance of the *White Paper* (including those pertaining to EA), have yet to be fully addressed. A multi-stakeholder group has been considering what further changes should be made. The report of the group is nearing completion but is not yet publicly available. Apparently, reaction to the *White Paper* recommendations has been mixed. It is possible that amendment will be made either to the *Manitoba Environment Act* or to the *Sustainable Development Act*.

Saskatchewan

EA requirements, in Saskatchewan, are defined in the *Environmental Assessment Act (1980)*.

Major features of EA requirements in Saskatchewan include:

- A definition of development that includes projects and activities (public or private) that are likely to have certain types of environmental effects;
- EIAs are conduced for most major projects in the province;
- Broad definition of the environment;
- The proponent is required to prepare and submit an EIA;
- The Minister gives notice of the assessment when aware that the assessment is about to be prepared;
- The Minister reviews the statement (statement and review available for public inspection);
- The Minister has the power to a require a public meeting at any time prior to his or her decision;
- The Minister has the power to appoint persons to conduct a public inquiry at any time prior to his decision (includes authority to pay persons for services and expenses);
- The Minister can decide to approve the development (with or without conditions) or refuse to approve the development; and
- The Minister give notice of decision, with reasons to proponent, to any other party who makes a written submission and any other party the Minister considers advisable.

Further details regarding the EA process (several timelines indicated) are detailed in guidelines;

- Proponent submits a proposal (proposal contents specified);
- Saskatchewan Environment and Resource Management (SERM) screens document (whether Act applicable, nature and scope of EIA, other regulatory requirements);
- If EIA required, SERM prepares project-specific guidelines (general guidelines for conducting an EIA also referenced);
- Proponent conducts and submits an environmental impact statement (EIS);
- SERM coordinates an interdepartmental review (if deficient proponent asked for additional studies) and then prepares final Technical Review comments (public notice and opportunity for public to review EIS and Technical Review comments);
- Minister makes decision (approve, with or without conditions, refuse to approve);
- Minister may appoint a Board of Inquiry any time point prior to a decision.

A major review of EA requirements in the province was initiated between 1990 and 1993. Several reforms were suggested. Examples include; measures to enhance public involvement, a three level process of review, EA harmonization provisions, timelines, mediation provisions, class assessment provisions, measures to enhance compliance and an automatic project review list. Reforms considered but not adopted included review by an independent EA commission, EA of policies and programs and intervenor funding. Ultimately the government decided against adopting any of the recommendations.

Recent changes have included *Guidelines for the Approval of Intensive Hog Operations* and a *Guide for Proposal Development for Oil and Natural Gas Projects*. The latter guideline is intended to streamline and enhance the efficiency of EA approvals for oil and natural gas projects. Other, more-broadly based initiatives of EA relevance, include: a *SERM Aboriginal Affairs Policy Framework, A SERM Policy Framework for Public Management of Saskatchewan's Environment and Natural Resources* and a *SERM Ecosystem-based Management Plan of Action*.

Future initiatives will depend on political support. There is currently limited industry or public support for changes to EA requirements. Future EA reform initiatives are likely to include further measures to streamline EA approvals and to add greater certainty to the process. The introduction of class EA provisions is a possibility.

Alberta

The EA process for Alberta is established in the *Environmental Protection and Enhancement Act (EPEA) (Part 2, Division 1)* and in related regulations. Major features of the Alberta EA requirements include the following:

- Mandatory activity list (various major public and private capital projects) and exempted activities; steps are identified for determining if the assessment process should be applied to other projects;
- Any Director may refer an activity to the Director responsible for environmental assessment, for a decision on the application of the Alberta environmental assessment process;
- Register of EA information (contents specified);
- Provisions for inter-jurisdictional EA agreements;
- Process stages (includes some timelines):
  - Initial review (Alberta Environment Protection is contacted by the proponent or another party. An EIA is automatically required for mandatory projects. For other projects, a decision is made based on a specified criteria list. The proponent is notified of the Director's decision. The proponent provides public notice of the decision, in a specified manner.);
  - Screening (The Director prepares a screening report. The contents of the screening report are specified. The screening report must be made available to the public in a specified manner. If an EIA report is required, the proponent will be required to prepare one. A public notice of the Director's decision is required, in a specified manner).
  - Preparation of an EIA report (The proponent must prepare a proposed terms of reference. The terms of reference are finalized after being reviewed by the Director and after made available for public review and comment. The final terms of reference are issued by the Director and made available to the public. The contents of the EIA report are specified in the Act, unless the Director indicates otherwise).
  - Final review (The Director reviews the EIA report and may request further information. The Director may require that the EIA report be published and made available. Public notice requirements are identified. A summary of the report [contents specified] also is required. The Director may, if the EIA report is complete, forward the report to the Energy Resources Conservation Board [ERCB] for approval [if such approval is required], forward the report to the Natural Resources Conservation Board [NRCB][if such approval is required] or send the EIA report to the Minister, together with supporting information. The Minister may then advise proponents

requiring approval that they may apply for them. The Minister also may make recommendations to other government departments or agencies or recommend to Cabinet that the proposed activity be reviewed by the NRCB.

The EA process is managed by Alberta Environmental Protection, but both the NRCB and ERCB participate actively in the EA process. Both Boards have provisions for intervenor funding. Both Boards also have prepared procedural, project-specific and technical guidelines and reports. The ERCB funded a research study on the treatment of cumulative effects and maintains a strong interest in applied research in such fields as human health and ecological risk assessment.

No EA regulatory reforms or additional EA guidelines are in preparation or are anticipated in the near future. All regulations are periodically reviewed. When the pertinent regulations of the *Alberta Environmental Protection and Enhancement Act* come up for review, they will be assessed at that time.

British Columbia

EA in British Columbia (BC), prior to 1995, was largely addressed through three separate EA processes – the Energy Project Review Process, the Mine Development Assessment Process and the Major Project Review Process. These three processes were replaced with the *Environmental Assessment Act*, which was proclaimed on June 30, 1995.

Major features of BC EA requirements include:

- Administered by an independent agency, the Environmental Assessment Office (EAO);
- Applied to a defined list of projects (size thresholds defined for each project);
- Establishes a project committee for each project (provincial ministries, Federal departments, First Nations and local government and neighboring jurisdictions);
- A public advisory committee can be established, at the discretion of the EAO, to made recommendations on specific applications (local residents and stakeholder groups);
- Project registry maintained by EAO (available in public libraries and at EAO web site);
- Provisions for category assessments;
- Provisions for an EA Board;

- Provisions to include mediation;
- Discretion to assist participants;
- Provisions for agreements with other Canadian jurisdictions;
- Prescribed time lines;
- Minister has power to designate a project as reviewable;
- Major stages (many with time lines);
  - Application review (Stage 1)(After preliminary consultation and data collection, the proponent submits a formal application for a project approval certificate to the EAO [contents are specified]. The EAO establishes a project committee, the application is circulated to government agencies and First Nations for comment and notice of the application is advertised [manner prescribed]. The project committee reviews the application, takes into account public, First Nations and agency comments and makes a recommendation on whether the application should be referred [by the EAO] to the responsible minister and the Minister of Environment, Lands and Parks [MELP] for a decision. The proponent is given an opportunity to respond to the comments. The Ministers' have the power to approve [with or without conditions] the project, reject the project or order the preparation of a project report. The decision, with written reasons, must be provided to the proponent.)
  - Project report preparation and review (Stage 2) (If a project report is requested, the Project Committee prepares draft specifications. The draft specifications are made known to the proponent, agencies, First Nations and the public. After a public review period, the project report specifications are finalized and the project report is prepared in accordance with the specifications [matters to include in the project report are listed]. The project report is submitted to the EAO. The Project Committee then decides if the specifications have been satisfied. After accepted for review, the project report is circulated to government agencies, the public and First Nations. Following a public review period, the Project Committee completes its examination of the project, taking into account all public submissions, and makes a recommendation to the two ministers. Provision also is made for concurrent review under other enactments. The two ministers can issue or refuse a project approval certificate. Alternatively, if there are unresolved issues, they can send the project forward to a public hearing before the EA Board).
  - Environmental Assessment Board Hearings (Stage 3) (The two ministers prepare draft terms of reference for the hearing [i.e., issues to address, permitting and licencing requirements].

Provision is made for public comment on the draft terms of reference. Provision also is made for mediation prior to or during the hearing. After the hearing is completed, the report and recommendations are submitted to Cabinet for a decision. The two ministers make the final decision for projects that only go through the first two stages. Conditions can be attached to the Project Approval Certificate.)

Since the passage of the Act, amendments have been made to increase some of the thresholds under the *Reviewable Project Regulation*. Other refinements and modifications have been introduced, using Orders-in-Council, including, most recently, the deletion of rapid transit projects from the EA review process. Such projects are to be addressed through independent reviews.

Guidelines have been prepared by the EAO to address general methodology (e.g., site selection, assessment environmental, social, economic, health, cultural and heritage effects), public participation and Aboriginal issues. Various issues also are addressed with information bulletins.

An evaluation of the BC EA process was completed in 1997, on behalf of the EAO (Sadler 1997). The evaluation addressed implementation to date, identified issues and considerations and made general and specific recommendations. The report concluded that the Act is being implemented in an appropriate manner but suggested several measures to enhance the effectiveness of the EA process, to ensure the identification of the full range of issues and effects, to resolve various technical issues, to promote certainty and to encourage accountability. The report is still under consideration. Various administrative measures, to facilitate process efficiencies, are likely to be implemented. No regulatory changes, as result of the report, are anticipated in the near future. Some minor interpretation issues may need to be addressed. Any substantial regulatory changes are not likely to occur without extensive public consultation.

Yukon

The Yukon Territory does not presently have an EA Act or a separate EA process. The Canadian Environmental Assessment Act (CEAA) currently applies to most of the Territory. The Department of Renewable Resources, of the Yukon Territorial

Government (YTG), has an Environmental Assessment Section to speak on behalf of the Department and the YTG regarding impacts and mitigation for projects within the Territory.

The process for establishing a formal EA process within the Yukon Territory is nearing completion. The first major step in that process was the signing of the Umbrella Final Agreement on May 29, 1993. The three parties to the Agreement are the government of Canada, the Council for Yukon Indians and the YTG. Chapter 12 of the agreement sets out the basic objectives and components for a new development assessment process (DAP) for the Yukon. Based on the chapter, the Government of Canada is to enact new EA legislation and the governments of both Canada and the Yukon are to amend existing laws, where necessary, to set up the process.

Several drafts (currently working on Draft # 12) of a *Yukon Development Assessment Act and Regulations* have been prepared. Major features of the October 15, 1998 draft include the following:

- Only one assessment process (DAP meets CEAA requirements and will be the EA process for the majority of projects in the Yukon) (provision for CEAA panel or joint panel if requested by Minister of Environment);
- Applies to projects on all lands in the Yukon;
- Inclusion / Exemption List (long list of activities, lists size thresholds below which exempt for many activities);
- Mandatory projects (generally large scale capital projects, most with scale thresholds);
- Discretion to apply where activity below threshold, to existing projects and to plans, proposals, policies and programs; in latter cases with consent of proponent;
- Potential to assess activities outside the Yukon that may have significant effects in the territory;
- Timelines regulation;
- Provides for establishment of 6 Designated Offices {DOs} to screen projects, review projects, make written recommendations and maintain a public registry;
- Provides for establishment of Yukon Development Assessment Board (YDAB) (including both an Executive Committee and Panels);
- Includes special provisions to protect First Nations' interests, to facilitate First Nations consultation and participation and to use traditional knowledge;

- Addresses linkages to regional land use plans, transboundary effects and other reviews;
- Decision body will vary depending on who is proponent and project location (different categories of land) (could be Federal government, YTG or First Nation);
- Provisions for class or area assessments;
- Provision for requests for project audits, effects monitoring, reviews of closures, cumulative effects studies and research;
- Special provisions for projects on Yukon North Slope;
- Major Stages;
  - Screening (Stage 1) (The proponent submits a proposal to the DO(s) or to the Executive Committee of the YDAB [latter if on Mandatory project list]. Screening will commence when all the required information is submitted. Input must be sought from and considered from the public, interested parties, agencies and the public. The assessment body(s) will consider the proposal and recommend whether the project should proceed [with or without conditions], not proceed or be subject to further assessment. Projects on the Mandatory project list will always be referred either to the YDAB Executive Committee for review or to the YDAB panel for a panel review [criteria for a panel referral are specified);
  - Review (Stage 2) (Reviews are designed for projects that are more controversial and/or with greater potential adverse impacts. Reviews are conducted by DOs or by the Executive Committee of YDAB [determined by referral criteria]. Consultation will occur with agencies, First Nations and the public. The outcome of the review is a recommendation to proceed, with or without conditions, or to not proceed);
  - Panel Review (Stage 3) (Panel reviews involve public hearings and are conducted by members of YDAB. The Executive Committee prepares the terms of reference for panel reviews. The review panel may recommend that the project not proceed or proceed with terms and conditions);
  - Decision (Stage 4) (The decision body considers the recommendations received, taking into account scientific knowledge, traditional knowledge, public concerns and other pertinent information. The Decision Body may, accept, vary or reject the recommendation of the assessment body. Or, it may refer the recommendation back to the assessment body. Written reasons must be provided if the recommendation is not accepted. Projects approved by the Decision Body must still obtain any required permits or licences; and,

- Matters to address in all three types of assessment are specified.

The proposed *Yukon Development Assessment Act* will be a Federal law. It must be passed by Parliament before it comes into force in the Yukon. Following public consultations on the draft legislation, a bill will be presented to Parliament. DAP will come into force following passage of the legislation.

A new draft Act and regulations are currently being prepared, taking into account public comments. Implementation is expected to occur prior to 1999.

Northwest Territories and Nunavut

EA throughout the Northwest Territories (NWT) was, up until 1998, subject to the requirements of the Canadian Environmental Assessment Act (CEAA). On June 18, 1998, when the Mackenzie Valley Resource Management Act (MVRMA) received royal assent, CEAA no longer applied in the Mackenzie Valley region of the Northwest Territories, except for specified circumstances. CEAA will continue to apply in the Mackenzie Valley in the event of a joint review under CEAA (when it is in the national interest to do so) and for transboundary developments.

The *Inuvialuit Final Agreement* and its enabling legislation the *Western Arctic (Inuvialuit) Claims Settlement Act* [S.C. 32-33 Elizabeth II, C. 24-28, June 1984] require the screening of developments of consequence to the Inuvialuit Settlement Region that are likely to have a negative impact on the environment, or on present or future wildlife harvesting. It provides for the establishment of the Environmental Impact Screening Committee (EISC) to carry out the preliminary screening of onshore developments. The Inuvialuit Settlement Region is located to the northwest of the Mackenzie Valley.

This discussion paper focuses on the EA requirements within the Mackenzie Valley. Contents of the Operating Guidelines for the Environmental Impact Screening Committee of the Inuvialuit Settlement Region also are briefly described.

The foundation for the MVRCA was established through the Gwich'in Comprehensive Land Claims Agreement and the Sahtu Dene and Metis Comprehensive Land Claims Agreements (signed

in 1992 and 1994 respectively). The MVRMA establishes an integrated and coordinated land and water management regime. Six co-management boards were established to manage all land and water uses in the Mackenzie Valley. One of these Boards is the Environmental Impact Review Board (EIRB). Part 5 of the MVRMA describes the EA process. Major features of the EA requirements, of the MVRMA, include the following;

- Development defined as an undertaking or part of an undertaking, carried out on land or water wholly within the Mackenzie Valley, except for exceptions as per Exceptions List regulations;
- EIRB – half of members from First Nations and half from Federal or Territorial governments, chair selected by members;
- Prescribed monitoring and auditing process (includes provisions pertaining to cumulative environmental impacts, First Nations consultation, the conduct of environmental audits and the consideration of both scientific information and traditional knowledge);
- Harmonizing measures for each EIA process stage;
- Explicit links to land use planning requirements;
- Defined roles for First Nations and for local government;
- Explicit consideration of transboundary impacts and impact significance;
- Major stages:
  - Preliminary screening (The developer applies for permit, licence or other authorization to a regulatory authority (e.g., a land or water board). The regulatory board determines if the undertaking is a development and checks the Statutes List regulation to determine licencing and permitting requirements. The EIRB has the authority to conduct an EA on an exempt activity in specified circumstances. The screening continues after a determination is made as whether the development complies with a settlement area land use plan. The regulatory authority refers the development to the EIRB if it might cause public concern or might have a significant adverse environmental impact. An EA also is required if referred by the Federal government, the Territorial government, the Gwich'in First Nation, the Sahtu First Nation or a local government.)
  - EA Process (The EIRM determines the scope of development for every EA. The Act specifies factors that must be considered. Coordination with other jurisdictions will be necessary if the development will be carried out, in part, outside the Mackenzie Valley. The EIRB can decide that 1)

a review of the development need not be conducted 2) the development can be approved subject to mitigative measures 3) a review of the proposal must be conducted or 4) the development is to be rejected without a review. The EIRB's report and decision is submitted to the Federal Minister and to other responsible bodies. Those responsible may adopt the recommendation, refer it back to the EIRB for further consideration, adopt the recommendation with modifications, reject it and order a review of the development or order the development to the Minister of Environment for a joint review. An EA must be completed before entering the review process).

- Review Process (The review panel is appointed by the EIRB. Other than the chairman, the review panel will have an equal number of First Nations and government members. The EIRB prepares the terms of reference for the review panel. The applicant submits the EA. The review panel analyzes the EA. Public consultations or hearings are conducted in communities affected by the development. The review panel summarizes public comments, describes its analysis and provides its conclusions and recommendations. These recommendations address such matters as development approval (with or without mitigative or remedial measures), follow-up program or development rejection. The Federal Minister or other responsible authority then adopts the recommendation, refers it back to the panel for further consideration, modifies the recommendation or rejects the recommendation. The decision is distributed to every First Nations, local government and other designated body affected by the decision).

A Working Group has been established to prepare for the implementation of EA requirements in the Mackenzie Valley. The Working Group is addressing such matters as communications strategy, guidelines and time frames for preliminary screening, training procedures, office procedures and by-laws, agency liaisons and other implementation requirements.

Nunavut officially came into being, as a separate Territory, on April 1, 1999. The *Nunavut Act 1993* and the *Nunavut Land Claims Agreement 1993* were two major steps in establishing a foundation for the new Territory. The government of Nunavut is being progressively established between 1993 and 2009.

The Agreement includes provisions for the establishment of the Nunavut Impact Review Board (NIRB), the Nunavut Planning Commission (NPC) and the Nunavut Water Board (NWB). Members to these Boards were appointed in 1996.

The Development Impact provisions of the Agreement generally parallel (in broad terms) those in the NWT. They address such matters as:

- Establishing and operating the NIRB (e.g., appointment, responsibilities, procedures);
- Procedures and factors for the screening and review of development proposals (including public hearing provisions);
- Links to land use planning (proposal must comply with any land use plan);
- Provisions for addressing transboundary impacts; and
- Provisions for ensuring the implementation of mitigation and monitoring measures.

The Environmental Impact Screening Committee (EISC) for the Inuvialuit Settlement Region, is responsible for the preliminary screening of proposed activities which may have a negative impact on ecosystems and /or Inuvialuit wildlife harvesting in or adjacent to the Inuvialuit Settlement Region, Northwest Territories. The purpose of the EISC *Operating Guidelines and Procedures* is to clearly outline the structure, procedures and information requirements of the EISC for project proponents, regulatory agencies, Inuvialuit organizations, co-management groups, and other interested parties.

Major provisions of the *Operating Guidelines and Procedures* include the following:

- The scope and mandate of the EISC (external request screenings, Inuvialuit private land, developments with transboundary effects, annual review of mineral activities by the EISC);
- The structure of the EISC;
- Requirements concerning screening proposals(community and government consultation, submission of a proposal for screening, the general guide to the "project description", the project description format, multi-year developments);
- The Environmental Impact Screening Process (notification of receipt of a submission, request for comments, responsibilities);
- A listing of developments that may be exempt from screening;
- A listing of questions to assist in the determination of the potential for significant negative environmental impacts;

- Provisions regarding meetings, briefs and presentations;
- Screening panels (composition and proceedings);
- Screening panel decisions (type of screening panel decision, screening panel decision, referral to the Environmental Impact Review Board);
- Important definitions and statement of authority;
- Key organizational contacts;
- The distribution of responsibilities for renewable resource management;
- Rules and procedures of the Inuvialuit land administration;
- Procedures for the issuance of Mineral Prospecting permits and licence; and
- Key documents.

Table A-1 – Newfoundland – Topic Area Overview
Resources
• EA budget has remained relatively constant over the past 2 to 3 years; can now recover costs but must first expend funds; funds must, therefore, be in budget • Have been cutbacks in line agencies in recent years but has not yet affected EA review functions yet; a worry • Able to keep up with demands • Proposed reforms would simplify and streamline process
EA Methodology
• Methodology addressed on project-by-project basis in terms of reference • Terms of reference include general and project-specific methodology (e.g., baseline descriptions, impact prediction, environmental protection plans, public participation) • Cumulative effects and ecological concerns addressed by Federal committee members • Indigenous issues being addressed through multi-party agreement
Public Participation
• Consultation at several stages in process (registration, draft terms of reference, public information program for EIS, Board) • Weekly Bulletin (registrations, conditions) • No participant or intervenor funding • Additional opportunities proposed (generic files, revised report review) • Open houses work better than public meetings • Panel reviews have worked well
Strategic Environmental Assessment
• Legislation calls for application to policies, plans and programs; not applied in 20 years • Proposal to remove from Act; a lot of public opposition to removal • Proposal all future submissions to Cabinet, on specific policy and program proposals, to include a section addressing environmental considerations • Regional environmental issues addressed through other means (e.g., Ozone Depleting Substances Regulation, Wilderness and Ecological Reserves Act, Canada-Newfoundland Atlantic Accord Implementation Newfoundland Act)
Scientific Challenges to EA
• Biological diversity • Energy policy • Global warming
Administrative and Procedural Challenges to EA
• Land claims implications for EA • Churchill Falls project; will require a multi-party agreement as per Voisey Bay • Ensuring both EA quality and efficiency • Federal coordination; need better communications channels (bilateral agreement may help)

Table A-2 – New Brunswick – Topic Area Overview
Resources
• Adequate resources to keep up with demands • EA budget has remained stable over past 2 to 3 years; overall environmental budget has declined by approximately 5% over past 2 to 3 years • EA duplication and overlap between Federal and provincial governments a concern (addressed in separate discussion paper)
EA Methodology
• Methodological guidance addressed in project guidelines; terms of reference must cross reference final guidelines • Cumulative effects generally addressed through planning • Biodiversity and risk methods addressed in project guidelines • Applying and refining innovative environmental management approach (e.g., clear enforcement, commitments satisfied) • Expect that Agency-CSA standards study will provide further methodological guidance
Public Participation
• Public input provisions to screening, to draft guidelines and to report (public meeting) • No participant or intervenor funding • No mediation or hearing panel provisions • Proposals to enhance public involvement (1993); not yet acted on • Small meetings often used as part of project review; more conducive to issue resolution • Community liaison committee (post approval) often established where there are issues • Formally document and respond to all issues raised by public
Strategic Environmental Assessment
• Memoranda to Cabinet on environmental implications; internal and informal documents; address issues and changes to legislation • Proposal for a more formal department and agency review process of programs (1993); not acted on and no plans to do so • Elements of SEA reflected in land use planning, resource management and environmental quality management (e.g., Air Resource Management areas under Clean Air Act, Endangered Species Act, Ecological Reserves Act)
Scientific Challenges to EA
• Air quality • Endangered species • Greenhouse gases and global warming • Issues must be addressed by government as a whole and then come to EA
Administrative and Procedural Challenges to EA
• Federal – provincial EA harmonization (the subject of a separate discussion paper) • Conflict resolution • Human health risk assessment • Streamlining and focus • EA quality, effectiveness and efficiency

Table A-3 – Prince Edward Island
Resources
• Difficult to keep up with Demand; funding and resource limitations (a lot of overtime) • Stable to small reduction in funding over past 2 to 3 years • Overall environmental budget has remained stable over past 5 years; this year increased by 10% to 15% but for other environmental protection initiatives • Greater demand as economic conditions improve • Employ joint Federal – provincial approaches as necessary • Not doing all would like to do
EA Methodology
• Cumulative effects rarely an issue; most projects small with minor effects; sometimes an issue with large Federal – provincial reviews • Where additional expertise required rely on Federal experts or independent review from consultants or universities • Methodological requirements addressed in project guidelines; proceeding cautiously (economic viability concerns) • Transboundary pollution addressed in separate act (reciprocal access)
Public Participation
• Public input to project-specific guidelines and into EIS review; usually public input also sought for terms of reference; often 2 or 3 iterations • Provision for review panel • No provision for participant or intervenor funding (except where Federal projects) • No formal provision for mediation • Open houses tend to work better than public meetings • Approaches vary with project scale (e.g., meetings with individual residents for small projects and panels for large projects) • Would like to put terms of reference and summary on line
Strategic Environmental Assessment
• Project lists includes some resource management activities (e.g., farm drainage of 50 ha, intensive livestock farms) as well as forest management plans and large scale forest clearing plans) • No plans for further SEA requirements; could be desirable for forest management and agricultural development areas • Policies and programs often not in a form suitable for assessment
Scientific Challenges to EA
• Global warming (likely a big issue for the Island in the future) • Transboundary water pollution (down St. Lawrence) • Transboundary air pollution (from the USA) • Assimilative capacity of inland waters • Environmental carrying capacity • Estuarine environments
Administrative and Procedural Challenges to EA
• Biodiversity and cumulative environmental effects starting to become issues • Waste management siting always controversial • Links EIA to land use planning, resource and environmental management • Integration of environmental carrying capacity issues into EIA; have to proceed very carefully (i.e., precautionary approach) • Federal –provincial communications sometimes a concern (addressed in separate discussion paper)

Table A-4 – Nova Scotia – Topic Area Overview
Resources • Difficult to keep up with demand; understaffed • Will have to draw upon expertise of other people in government • EA budget has remained stable over past 2 to 3 years; staffing levels have fluctuated but number of staffing positions has not changed • Environmental budget has declined approximately 10% per year over same period • Coping at project level but not able to consider policy
EA Methodology • Addresses methodology on a project by project basis; • Project guidelines address project description, reasons for the undertaking, treatment of alternatives, existing environment, impact prediction, mitigation, residual environmental effects, compliance and effects monitoring, public information program) • Terms and conditions for EA approval generally include provision for project environmental protection plans)
Public Participation • Act and regulations provide for public input at project registration, focus report, terms of reference and report review; also provides for Board review and for alternative dispute resolution • Terms and conditions often require a public consultation program (including provision for community liaison committee(s) • Specific requirements in project guidelines • Increased use of open houses and other more interactive procedures • Stressing early public involvement; occurring more often
Strategic Environmental Assessment • Act provides for application to policies, plans and programs; has yet to occur • Being addressed at other levels and in other forms (e.g., Sustainable Development Strategy, Minister's Task Force on Clean Air and Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation (Nova Scotia) Act
Scientific Challenges to EA • Biological diversity • Offshore oil and gas • Transboundary pollution • Sustainable development • Cumulative effects • Greenhouse gases • Resource management
Critical Emerging Issues • Increasing focus on use of monitoring and of environmental protection plans • Cost recovery • Harmonization and reduction of overlaps between Federal and provincial governments (addressed in a separate discussion paper)

Table A-5 – Quebec – Topic Area Overview
Resources
• Can keep up with demand • Able to draw upon other Ministry staff if and when necessary • EA budget has been stable over past 3 to 4 years • Additional funds were provided in 1996 to address costs associated with adding industrial projects to EA requirements • Some cutbacks in environmental department in recent years but no impact on EA
EA Methodology
• Regulations require that EIA must be conceptualized and prepared according the scientific method • General guide for environmental impact studies address various methodological issues (e.g., assessing alternatives, modeling, forecasting and selecting); also addressed in project-type and project-specific guidelines (address with proponent) • Use US EPA standards for risk assessment • Task group considering human health EA methods • Not much experience with cumulative effects; not a legal requirement but often ask for
Public Participation
• EA requirements pertain to project notice and report review • Provision for public hearing (can include mediation) • No participant or intervenor funding • Public consultation guidelines to be released shortly; need to refine procedures for consultation with Cree and Inuit • Always recommend early involvement and involvement at each decision point • Use both open houses and public meetings; usually helpful to meet with each group separately • Would like to modify requirements to ensure earlier public consultation
Strategic Environmental Assessment
• Act refers to plans and programs but list is only for projects and activities • Act notes that project "with several elements" referred to in the section "comprises a single project" • Research paper prepared on SEA experience elsewhere • Being considered by an inter-ministerial working group; hope to have report by June 1999 • May be voluntary for some ministries (for plans and programs) • Proceeding carefully • Separate Act for ecological reserves
Scientific Challenges to EA
• Varies by project • Transboundary pollution • Biodiversity • Cumulative effects • Global warming
Administrative and Procedural Challenges to EA
• Strategic environmental assessment • Early public consultation • EA implications of land claims • EA quality and effectiveness • Focusing data collection efforts of proponents • Refinements to monitoring and follow-up; generally working well

Table A-6 – Ontario – Topic Area Overview
Resources • EA budget reduced by 16% between 95/96 and 96/97; increased by 8% between 96/97 and 97/98 and reduced by 3.2% between 97/98 and 98/99 • Overall MOE budget reduced by approximately 30% in 96/97; MNR budget reduced by approximately 45%; has had impact on ability of line agencies to review EA in a timely manner • Transition period while preparing guidelines to deal with new legislation and reviewing EA documents • Restructuring of Ministry (one window approach to approvals) a challenge • Reconsidering and revising document circulation procedures and review comment format to enhance efficiency and effectiveness • Budget for EA stable but funding for environmental reviewers cut back
EA Methodology • General EA methodology addressed in guidelines (some need of updating) • Research report on evaluation methods • Environmental quality and modeled requirements generally explicit • Tendency to address cumulative effects on an individual project basis; usually Federal role • Biodiversity not yet an issue • Have risk assessment expertise • Addressing traditional knowledge through early consultation
Public Participation • Requirement for public involvement in terms of reference and EA preparation • Provisions for public involvement in EA review • Mediation and public hearing provisions • No intervenor (except cost awards) or participant funding • Public consultation guidelines; new guideline in draft form; focus on principles and performance standards rather than specific methods; need flexibility • Use of public advisory committees common with waste projects • Some class assessments require liaison committee (post approval) • Stress need for early involvement and proactive approaches
Strategic Environmental Assessment • Undertaking in Act includes plans and programs but rarely applied; some examples (forest management, hydro demand / supply); experience mixed • Requires higher level policy guidance to work; EA poor instrument for addressing policy issues; usually focus on what is practical in addressing need and alternatives • Environmental Bill of Rights a form of SEA (statement of environmental values for each ministry, classification of policies, act and regulations based on level of effect significance, registry, public review and participation provisions depending on class, environmental commissioner, right to sue if harm to public resource) • Various broad environmental policy and program initiatives ~~(e.g., Living Legacy strategy)~~
Scientific Challenges to EA • Biodiversity • Cumulative effects • Transboundary pollution • Environmental quality • Resource conservation

Table A-6 – Ontario – Topic Area Overview
Administrative and Procedural Challenges to EA
• Timely decisions • Process uncertainties • Federal provincial EA harmonization • Coping with major policy shifts • Vague "bump-up" criteria • Cost recovery • Shifting to a client service orientation • Integration of EA and environmental approvals • Ensuring efficiency while protecting environmental quality • Privatization (issue of accountability) • Follow-up and compliance

Table A-7 – Manitoba – Topic Area Overview
Resources
• Resources are marginal; just keeping up • Funding has stayed basically the same over the past 2 to 3 years • No back-up capabilities • Sometimes files are delayed
EA Methodology
• Methodology generally addressed through project-specific guidelines; work with proponent • Some input from Federal guidelines and from Federal agencies • Sustainability a key issue as reflected in major reform initiative (Sustainable Development Act); addressed in project reviews (e.g., pollution prevention) • Difficulties in addressing cumulative effects (e.g., role definition, lack of regional data base, forecasting difficulties)
Public Participation
• Provision for public involvement in proposal screening, in guideline review and in EA review • Option of hearing (mediation provisions) • Legislation provides for intervenor and participant funding but not really used (a controversial subject under discussion) • General public consultation guideline • Would like to provide much more data on-line • Emphasize up-front involvement • Meetings and open houses the most common methods; citizen review meetings often held in conjunction with open houses • Procedures for involvement by Indigenous involvement will require further attention
Strategic Environmental Assessment
• Addressed to some extent with existing EA legislation (e.g., forest management plans) • Sustainable Development Act includes sustainable development principles, indicators and strategy; also includes public sector requirements (e.g., provincial code of practice, financial management guidelines and reporting) • No clear direction regarding more formal application to policies, plans and programs
Scientific Challenges to EA
• Climate change • Global warming • Biodiversity • Addressed, in part, through other measures (e.g., Ozone Depletion Substances Act, Transboundary Pollution Reciprocal Access Act) • Cumulative effects and assimilative capacity (e.g., agricultural waste water)
Administrative and Procedural Challenges to EA
• EA Harmonization with Federal government • Aboriginal involvement in the EA process • Implications for province of CEAA review • Further amendments arising out of the White Paper on The Sustainable Development Act • Interrelationships – land use planning, resource and environmental management; need for better integration • Links to watershed management • Environmental risk analysis • Environmental monitoring • Integration of sustainability • Streamlining and focus

Table A-8 – Saskatchewan – Topic Area Overview
Resources
• Doing well with available resources • Budget levels have remained the same over past 2 to 3 years • When oil and gas at 100% have difficulty keeping up • New measures to streamline review of oil and gas projects should help • Will be looking for other ways to streamline process in the future
EA Methodology
• New initiatives –Ecosystem-based Management Plan of Action (includes model and workbook), Aboriginal Affairs Policy Framework and Public Involvement in the Management of Saskatchewan's Natural Resources • Approaches to integrating EA with environmental planning and management breaking new ground • New project-type guidelines – oil and gas projects and intensive hog operations • Delays in legislative reform inhibited consideration of cumulative effects; do try to incorporate into project-specific guidelines; concern with fairness to proponent; often beyond ability to control
Strategic Environmental Assessment
• Considered but rejected in 1992; process not considered appropriate for application to policies and programs • Environmental implications of policies do tend to be considered informally • Working toward closer integration – EIA, land use planning and environmental management • Seeking closer integration of environmental planning and environmental management by industry • Province does produce state-of-the-environment report (every two years)
Public Participation
• Provision for public involvement – notification, project guidelines and EA review; also hearing option • New departmental policy framework for public and Aboriginal involvement • Co-management an emerging approach, especially with Aboriginal communities • Increased emphasis on early involvement and on community-based approaches • Conference held every two years to identify what does and doesn't work in public involvement • No participant or intervenor funding, except where joint panel; funding is possible under the Government Organization Act • An extensive range of approaches being used; many stakeholder groups
Scientific Challenges to EA
• Transboundary issues (e.g., tar sands) • Global warming not an issue but will have to look into • Cumulative effects • Failure to integrate environmental management approaches; among government levels and between public and private sectors • Ecosystem management and biodiversity
Administrative and Procedural Challenges to EA
• Shift in orientation away from mega-projects (shifting scale to mid-sized projects and multiple small projects) • Integration with land use planning and environmental management • Unresolved harmonization issues • Difficulties with addressing cumulative effects for individual projects • EA quality and effectiveness; need to accelerate learning curve (at project and at system level) • Streamlining process • Making process more certain, timely, consistent and user-friendly

Table A-9 – Alberta – Topic Area Overview
Resources
• Additional resources added last year to cope with economic growth • Overall EA budget approximately $4 million; extra $2 million added for 98/99 and 99/2000; funds applied for environmental review team members in line agencies and to regional offices
EA Methodology
• Worked out on a project-by-project basis (e.g., detailed cumulative effects analysis requirements for oil sands) • Work closely with Boards (ERCB and NRCB) regarding methodological requirements • ERCB commissioned applied research on cumulative effects (CE); also worked closely with Agency on CE practitioner's guide; considering an information letter with both Boards on CE • University of Alberta has a chair in environmental and human health risk assessment; co-funded by government and industry; send participants for training • Addressed CE in Sustainable Development Strategy • Do a lot of applied research • Looking at ways of applying Canadian Biodiversity Strategy • Addressing environmental monitoring gaps
Public Participation
• Provision for public input to initial review, screening, terms of reference (draft and final) and EIA report; also provision for public hearing (occurs on most projects – transparent decision-making process) • Both Boards provide intervenor funding; funding sometimes provide for document review • Long history of community-based EA, including community advisory committees, pre and post approval (some evolve into regional environmental organizations)
Strategic Environmental Assessment
• No plans to move beyond projects • Some issues relate to legislative interpretation; small and medium-sized projects addressed by environmental requirements elsewhere in Act; many elements the same as EA • Addressed, in part, by other mechanisms (e.g., Alberta's Commitment to Sustainable Resource and Environmental Management Sustainable Development Strategy for Northeast Alberta, Wilderness Areas, Ecological Reserves and Natural Areas Act and environmental quality and resource management initiatives) • Alberta's Commitment to Sustainable Resource and Environment seeks to coordinate regulatory reforms of departments of Environmental Protection, Energy and Agriculture, Food and Rural Development; it also seeks collaborative involvement with industry, public and other interests
Scientific Challenges to EA
• Cumulative effects • Biodiversity • Transboundary pollution • Terrestrial landscapes
Administrative and Procedural Challenges to EA
• Cumulative effects • EA harmonization • Science and forecasting uncertainties; need for more adaptive approaches • Integrating values • Simple structures for recurrent off-site effects • Decisionmaking for complex projects, problems and environments • First Nations involvement • Accommodating multiple perspectives • Increased litigation (could undermine EA and environmental protection) • EA quality and effectiveness

Table A-10 – British Columbia – Topic Area Overview
Resources • Resources within EAO adequate but staff changes within line agencies have inhibited the process (e.g., delays, gaps in expertise) • Looking at further efficiency and effectiveness measures • Challenging line agencies to detail their review process and review criteria (EA not a high priority for other agencies) • Modest core funding decrease (less than 5%) for EA over past 2 to 3 years; increased funding for special projects
EA Methodology • General methodology addressed in overall guidelines • Rely on line agencies to detail methodological requirements; challenge them to do so • Addressed on a project-by-project basis; concerned with "one-size-fits-all" guidelines (e.g., cumulative effects) • Currently preparing significance criteria • Many technical guidelines, manuals and criteria (e.g., water quality, fisheries, air resources, habitat analysis); many through the Resource Inventory Committee • Sometimes inhibited by policy gaps
Public Participation • Provision for public input (application review, project report specifications, project report review and at hearing) • Provisions for public advisory committee (PAC) and mediation • Provision for participant assistance (out of core funding – a low priority but has occurred) (fund First Nations and PAC expenses) • Guidelines for public and First Nations involvement (to be updated) • PAC when range of views and identifiable organizations; otherwise open houses and meetings • Increasing use of workshops and one-on-one meetings to address issues
Strategic Environmental Assessment • Under Act can examine policy behind project; a few examples (e.g., Salmon Aquaculture review, Bamberton community plan) • Addressed through a variety of mechanisms (e.g., Growth Strategies Act, Forest Practices Code, State of the Environment Report, Ministry strategic plans, Environmental Action Plan for BC, Provincial Land Use Strategy, A Protected Area Strategy for BC, regional land use plans (through the Commission on Resources and Environment [CORE] and Strategic planning initiatives (e.g., Fraser river, Greater Vancouver Regional District)
Scientific Challenges to EA • Transboundary pollution, especially in northwest • Regional environmental implications of access • Global warming • Fisheries and forest protection • Biodiversity
Administrative and Procedural Challenges to EA • Post certification enforcement and monitoring • EA implications of court decisions (e.g., Delgamuukw) • EA provisions in land claims agreements • EA efficiency (e.g., being addressed by BC Business Task Force) • Relationship of EA and permit approvals • Enhancing participation of First Nations and the public • Cumulative effects • EA harmonization • EA and ski hills

Table A-11 – Yukon – Topic Area Overview
Resources • Budget stable the past 2 to 3 years; major infusion as Development Assessment Process established • Reasonable division of responsibility between levels • Tri-party system; should avoid duplication and ensure use of all available expertise • Streamlining a key; must make maximum use of available resources • Thorough project scoping essential; project guidelines must focus on key issues
EA Methodology • Provision in legislation for requests for project audits, effects monitoring, reviews of closures, cumulative effects studies and research • Provisions to assess external projects that could have significant impacts on the Yukon • Special provisions to address transboundary effects and to include traditional knowledge • Rely on Territorial (wildlife, fish and community) and Federal expertise; supplement as necessary
Public Participation • Public registry • Provisions for public involvement in screening, review and panel hearings • Rules of procedures for DOs and YDAB must include procedures for participation of interested parties • Considering funding program regulation to facilitate public participation in panel reviews • Several specific provisions to ensure First Nations consultation and co-management and to protect First Nations' interests; Yukon First Nations will be a Decision Body for projects that occur on their settlement lands • Strong tradition of community-based consultation • UFA includes a dispute resolution board
Strategic Environmental Assessment • Plans, proposals, policies and programs of governments or First Nations may be subject to DAP if request made by proponent or by other party with proponent's consent; same for plans prepared by or for a body other than government or First Nations • Provisions for class or area assessments • SEA type concerns to be addressed through Regional Land Use Planning Commissions, Renewable Resource Councils, Fish and Wildlife Management Boards and initiatives such as protected area strategy
Scientific Challenges to EA • Water management • Fish and wildlife management • Protected Areas • Resource management • Access and land use planning • Tenure and management of settlement land • Heritage • Biodiversity
Administrative and Procedural Challenges to EA • Refining EA requirements • Capacity building • Implementation of EA system • Relationship of EA to regional land use planning, other UFA boards and committees and transboundary regimes • Role of municipalities and refinements to First Nations' roles • Participant funding • Certainty in the process

- Refinements to public consultation requirements and procedures
- Handling development in sensitive areas
- Refinements to activity lists and thresholds
- Devolution

Table A-12 – Northwest Territories and Nunavut – Topic Area Overview
Resources
• Joint approach should ensure effective resource use • Nunavut budget has been stable since Board established in 1995 • Much capacity building required, especially in Nunavut (a good start in both Territories) • EA budget for NWT has remained stable over past 2 to 3 years; modest cutbacks for technical environmental review
EA Methodology
• Provisions to address ecosystem, transboundary and cumulative impacts and for considering impact significance • Provisions to integrate traditional and scientific knowledge • Provisions to ensure systematic environmental monitoring and auditing requirements • Established expertise (NWT) – wildlife, fish and community characteristics and impacts • Work closely with Federal experts • Both Boards are moving rapidly to build their knowledge base • Working improve mapping of land use and resource activities
Public Participation
• Provisions for public input to screening, to review process and to hearings • Long tradition of co-management and decentralized decisionmaking; reflected in EA process • Detailed provisions for participation, co-management and, in some cases, decisionmaking by First Nations in EA process • Defined role for local government and links to land use planning (must comply with plan) conducive to effective participation; same for provisions to integrate traditional knowledge • Environmental Rights Act in NWT; provisions for access to information, investigations and right to protect environment conducive to participation
Strategic Environmental Assessment
• Integrated EA – land use planning • Explicit consideration of cumulative effects (including in monitoring) and of transboundary effects • Integrated tri-party EA process conducive to addressing area-wide and inter-sectoral issues • Sustainable Development Policy and Protected Area Strategy (NWT) • Other mechanisms (e.g., Environmental Protection Act, Environmental Rights Act) (NWT)
Scientific Challenges to EA
• Biodiversity • Management of wildlife and resources • Protected areas • Energy efficiency • Environmental quality and protection • Transboundary impacts • Cumulative impacts • Heritage and culture • Land use and water
Administrative and Procedural Challenges to EA
• Refinements to requirements and procedures • Capacity building • Process clarity and certainty • Roles and responsibilities • Integration of traditional knowledge • Treatment of cumulative and transboundary impacts • Ensuring EA quality, efficiency and effectiveness • Sustainability • Interrelationships between staff and review board and among boards; integrated applications (

1 window approach) • Screening of research projects

APPENDIX B

International EA Systems

This Appendix describes the characteristics of EA systems in Australia, Norway, Germany, the Netherlands, the United Kingdom and the United States. Appendix Tables B-1 to B-6 highlights EA challenges and trends, by topic area, for each jurisdiction. An overview of European EA requirements is included to place in context the requirements and experiences in Germany, the Netherlands and the United Kingdom. Norway is not a member of the European Union but complies European EA Directives.

Australia

EA in Australia is a shared responsibility between the Commonwealth and State and Territorial governments. EA was first introduced at the Commonwealth level in 1974, with the *Environmental Protection (Impact of Proposal Act (EPIP)* and Administrative Procedures. State and Territorial EA requirements were progressively introduced from early 1970s (beginning with New South Wales in 1972). This overview focuses on EA characteristics at the Commonwealth level.

The impetus for the *EPIP Act* was the *National Environmental Policy Act (NEPA) (1970)* in the United States. The Australian Environmental Council established a working party on EIA in 1972. The *EPIP Act* and Administrative procedures were introduced by the end of 1974. The *EPIP Act* is modeled after *NEPA* but is more discretionary (Harvey 1998). It has been amended several times since coming into effect in July 1975.

Major features of the *EPIP Act* and Administrative Procedures include:

- Act administered by Environment Australia on behalf of the Department of the Environment;
- Defines Commonwealth actions as actions conducted, funded or approved by the Commonwealth (includes negotiation, operation and enforcement of agreements and arrangements) (in practice mainly projects but intent broader);
- Does not apply to private developments not requiring Commonwealth approval or decisions under the *World Heritage Properties Conservation Act 1983;*
- Broad definition of the environment (natural, built and socio-economic);

- Limited to environmentally significant effects (interpretations of significance assisted by *ANZECC guidelines and criteria for determining the need for and level of EIA in Australia* and a Departmental Memorandum of Understanding) (includes any action that could threaten with extinction or significantly impede a species or community listed under the *Endangered Species Protection Act 1992)*;
- Minister or agency responsible for proposed action decides if a Commonwealth action and if environmentally significant;
- Proponent required to file a Notice of Intent (NOI) (summary document – project description, alternatives, stage of development, potential impacts, standards and safeguards);
- Four assessment levels (Environmental Impact Statement [EIS]or a Public Environmental Report [PER], preparation and public review of EIS, preparation and public review of EIS and examination by a Commission of Inquiry (Administrative Procedures include criteria for determining whether PER or EIS and content requirements of each document type);
- Minister for the Environment determines if a PER, an EIS or neither (Environment Australia prepares project-specific guidelines);
- Public review provisions for PER or draft EIS with assessment by Environment Australia of the PER or final EIS;
- Action Minister makes final decision (taking in account comments, suggestions and recommendations of the Minister for the Environment) (criteria for making a decision specified in Administrative Procedures);
- Minister of the Environment may require a Commission of Inquiry (only five between 1974 and 1997); and
- Provisions for joint or cooperative assessments with state / territorial processes.

The Administrative Procedures were amended in 1987 to allow the preparation of PERs where proposals are of a localized nature or involve only one or two major issues. A further amendment occurred in 1995 in response to a court decision that stipulated that Action Ministers had to consider the significance of environmental impacts.

There have been several EIA and EIA-related reform initiatives since 1990. Examples of major initiatives include:

- *A National Approach to Impact Assessment 1991* (prepared by the Australian and New Zealand Environment and Conservation Council, this document defines key common terms, identifies EIA objectives, links EIA to ecologically sustainable development, identifies national EIA principles [for each participant type] and suggests national EIA practice characteristics [including SEA and a national EIA agreement]);

- *A National Strategy for Ecologically Sustainable Development (1992)* (a wide-ranging document that encompasses numerous sectors [e.g., agriculture, fisheries, native vegetation, land use planning, energy use, EIA] and explicitly links each to ecologically sustainable development); EIA recommendations address process coverage and knowledge base, process clarity and community access and post-approval accountability;
- *An Intergovernmental Agreement on the Environment (1992)* (addresses principles, roles and responsibilities for environmental policy including EIA [e.g., effects to be considered, major process components, framework agreement to avoid duplication, accreditation of EIA processes by another government level]);
- *Review of Commonwealth EIA (1994)* (although ultimately unsuccessful, this comprehensive review addressed many important EIA issues such as the definition of a Commonwealth EIA role, the need for national EIA standards, guiding principles for EIA reform, reform options, the possible use of designated developments, the treatment of social and cumulative effects and the potential role of SEA);
- *Guidelines and Criteria for Determining the Need for and Level of EIA in Australia (1996)*(outlines the process and factors that provide the basis for applying EIA to proposals – a comprehensive array of criteria [character of receiving environment, potential impacts, resilience of natural and human environment to cope with change, confidence of predictions, presence of planning policy framework, other statutory decision-making processes and degree of public interest]; also addresses how to apply);
- *Basis for a National Agreement on EIA (1997)* (encompasses such matters as legal rights and obligations, notification procedures, information exchange, cooperative assessment arrangements and the role of each party in State-led, joint and Commonwealth-led assessments); and
- *Reform of Commonwealth Environmental Legislation Consultation Paper (Hill Report) (1998)* (a major review that addresses the proposed content of an *Environmental Protection Act*, a *Biodiversity Conservation Act*, reform of heritage legislation and enforcement and compliance).

The Hill report set the stage for the *Environmental Protection and Biodiversity Bill (1998)*, currently before the Australian parliament. Under the Bill, generic, up-front accreditation of "complying" State assessments is possible. Other features of the proposed Bill include:

- The clear prohibition of actions that will cause significant "national" environmental effects;

- The circumscribing of national powers to a limited set of "national" issues (national environmental significance tests are defined) but with a clearly defined basis for approvals and enforcement (not currently in place);
- New triggering provisions that place the onus on proponents and state authorities to seek a determination on whether a Commonwealth approval is required (a companion requirement to the prohibitions) (provides greater precision in procedures for determining whether approval of actions is needed);
- An expanded range of project assessment options (i.e., a process laid down under a bilateral agreement, a process specified in a declaration by the Minister, preliminary documentation, a public environmental report, an environmental impact statement, a public inquiry) (includes timing requirements);
- Strategic environmental assessment of policies, plans and programs (discretionary; describes general process as well as specific process for Commonwealth-managed fisheries);
- The integration of sustainable development criteria into assessment processes and decision-making (requires consideration of precautionary principle and specifies principles of ecologically sustainable development in considerations for approval; also links approvals to specified areas of national environmental significance);
- Special provisions regarding offshore actions, foreign aid, aircraft operations in airspace, airport development plans, permit applications for whales, dolphins and porpoises and assessment under agreements with States or Territories;
- A full regime for compliance, reporting and enforcement of breaches of prohibitions, approvals and conditions; and
- Application of environmental management systems through approval conditions.

The proposed Bill also includes an extensive range of provisions directed toward the conservation of biodiversity (e.g., bioregional plans, species and community protection, conservation agreements, and protected areas). The proposed Bill is not without its critics, some of whom (Mould 1998) argue that the Commonwealth EIA role will be greatly restricted as a result of accreditation and a too narrowly defined national environmental significance test.

European Union

EA within the European Community is addressed through European Council Directives. The European Commission proposes legislation, in the form of regulations (binding and applicable to member states) and directives (binding on member states but applied through national

legislation and through the actions of regional and local authorities). A directive specifies ends but means are left to the discretion of member states (Jordan 1998; Wood 1995).

Operationally, the Commission is divided into 23 directorates general (DGs). Environmental matters (including EIA) are addressed by the Directorate General for Environment, Nuclear Safety and Civil Protection (DG XI) (Jordan 1998). Additional technical support is provided through the European Environmental Agency (EEA). The EEA is based in Copenhagen and has been operational since 1994. The EEA provides environmental data and forecasts to the Union, to member states and to other countries. The information provided facilitates the establishment and implementation of environmental protection policies, legislation and directives.

It took ten years but the first EIA Directive (85/337/EEC) was passed in 1985 (Wood 1995). The Directive outlines basic EA requirements regarding such matters as; project (both public and private) descriptions, major stages, public consultation principles and transboundary consultation. Annexes to the Directive address classes of projects subject to EA requirements (Annex I), classes of projects where application is at the discretion of member states (Annex II) and EA content requirements (Annex III). The member states were left to determine such matters as the scope and timing of the assessment, information completeness and quality, transboundary consultation procedures and the treatment of alternatives. Implementation of the Directive was apparently slow but a majority of states had adopted EIA requirements, in accordance with the Directive, by 1993 (CEC 1993). Further changes and improvements have occurred since 1993 (CEC 1998).

An amended EIA Directive (7/11/EC) was passed in 1997. Member states were given until 4 March 1999 to transpose the amended EIA Directive. The new Directive tightens up and extends many provisions. Scoping and the analysis of alternatives are now mandatory. Also mandatory is consultation with the public and with environmental authorities in neighbouring states (as per the *ECE Convention on EIA in a Transboundary Context)*. Several additional categories and projects were added to the Annex I and II lists. A new Annex (Annex III) was added with screening criteria (project characteristics, project locations, impact characteristics, documentation requirements) and refinements were made to the content requirements annex (now Annex IV).

After ten years of effort, a SEA proposal (a draft Directive) (COM 96/0511 Final) was adopted in December1996. An amended proposal (COM 99 73 received first reading on 20 October 1998.) Council amended the SEA

proposal in February 1999. Negotiations at the Council level were expected to commence in the spring of 1999, with the aim to develop a Directive. Several member states have expressed concern with the SEA proposal. The proposal has been criticized because:

- It applies to all plans and programmes, that set a framework for development consents, even when there is little or no environmental impact;
- The proposal emphasizes procedures rather than purpose or the risks associated with adding new planning process stages;
- Environmental considerations are only examined when the plan or programme is largely complete (this contrasts with the more integrated approach used in, for example, the United Kingdom (UK);
- It may be used to obstruct strategies and developments even when such initiatives command wide support and would bring general environmental or sustainability benefits; and
- It does not link EA to sustainable development.

The proposal was not brought forward by the UK during its presidency (January – June 1998) because of the conflicting perspectives and the complexity of the issues. Negotiations under the German presidency took place in the spring of 1999 and are expected to continue under the Finnish presidency in the autumn of 1999. The UK held a policy seminar to explore issues and to seek ways forward. The seminar was well received by participants, who included senior environmental policy officials from the EU member states and the European Commission, together with representatives from local government, environmental groups, consultancies and universities.

The SEA Proposal addresses the EA of town and country plans and programs (i.e., strategic environmental assessment (SEA) and significant modifications to such plans and programs. The Proposal addresses deficiencies in the current system and identifies minimum requirements (Feldman 1998). The policy level is not included, although investigations of this level continue by the Commission.

The plans and programmes encompass such sectors as transport, energy, waste management, water resources management, industry, telecommunications and tourism. An environmental statement must be prepared. General consultation procedures and general document requirements are specified. As with the project-related Directive, these draft Directives concentrate on general principles. Procedural and substantive details are left to the member states. The amended Proposal adds additional sectors (forestry, agriculture, fisheries, and urban development plans), makes explicit reference to sustainable development,

requires consultation with appropriate bodies, organizations and the public, gives a more prominent role to the consideration of alternatives (including the no-action alternative) and includes more specific procedural requirements regarding such matters as deadlines for administrative procedures, monitoring and surveillance.

The European Commission, through the Directorate General for Environment, Nuclear Safety and Civil Protection has prepared three quite detailed guidelines:

1) *Guideline on Screening* (includes a framework for typical screening process with guidance for each screening stage and a checklist of screening questions);
2) 2) *Guidelines for Scoping* (includes scoping guidance for each EA process stage, potential impacts and alternatives and impact significance criteria); and
3) *Review Checklist* (includes a comprehensive list of considerations for determining the completeness and suitability of all major components in an EA).

These documents were prepared to facilitate good EA practice. The preparation of each document included the participation of a steering committee of member state representatives. The use and effectiveness of these documents are currently being monitored, as a basis for further updating and refinement. The EU Commission is starting two new studies, one on public participation in EIA and SEA and the other an updating of EIA guidelines. These studies will be monitored by two steering committees, put together in April 1999.

The European Commission as identified environmental integration as a priority. Policy EA is an important instrument for environmental integration. A 1993 Communication required that all future Commission actions be screened and environmentally assessed if they are likely to have significant environmental effects. The Communication also stipulated that new legislative proposals be accompanied by an environmental statement. The statement is to describe and justify environmental impacts. Environmental costs and benefits are to be included in an Explanatory Memorandum. In 1994 the Commission introduced a "green star system" to screen legislative proposals for environmental impact. Each DG has to undertake a regular evaluation of its environmental performance and prepare an annual progress report (Jaap de Boer and Sadler 1996).

Other relevant European EA initiatives include;

- Over 400 pieces of legislation related to environmental protection (Jordan 1998);

- a research study on the benefits and costs associated with EA implementation;
- a study of the implementation of SEA within the European Union by the EIA Centre at the University of Manchester;
- a study to develop and implement an overall strategy for EIA / SEA research in the EU;
- SEA case studies and trial runs;
- EIA and SEA research studies;
- the organizing of training and research workshops; and
- the development of a network of EIA Centres.

The European Union has launched several environmental initiatives that place EA within a broader environmental context and inextricably bound up the environmental policy of member states within the European Community (EC) policy.

Examples include:

- A European Community sustainable development strategy;
- Conventions on Transboundary Effects of Industrial Accidents (1991), the Protection and Use of Transboundary Watercourses and International Lakes (1992), various protocols to the 1979 Convention on Long Range Transboundary Air Pollution, A Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters (UN ECE 1998) and a Convention on the Protection of the Archaeological Heritage (the Malta Convention).z;
- The enshrining of sustainable development as one of Union's tasks in the *Treaty of Amsterdam*;
- A Directive (96/61) on integrated pollution prevention and control and a Council Regulation (EEC No. 1836/93, 29 June 1993) allowing voluntary participation by companies in the industrial sector in a Community eco-management and audit scheme;
- A report addressing the interrelationships among the EC pollution prevention directive, EIA Directives and the EC ecomanagement and audit scheme (IMPEL 1998); and
- The preparation of a guide to the approximation of EC environmental legislation (CEC 1997).

Norway

Regulations to the *Planning and Building Act 1985,* introduced in 1990, provided the first formal and general EIA requirements in Norway. Before 1990 special laws (e.g., oil and gas exploitation) required developers to address environmental consequences (Holm-Hansen 1990). The

Regulations require the early consideration of the natural environmental, resource, societal and health effects resulting from a wide range of (generally large) public, private and development assistance projects. EIA also is mandatory for land use pattern changes likely to have significant environmental, natural resource or societal impacts (UNECE 1991).

The Norwegian regulations prescribe a two-phase procedure (notification, environmental impact statement). Scoping is addressed through project specific terms of reference (formal, binding and published). Detailed procedural guidelines give direction and advice to all participants. Appendices to Norwegian EIA regulations give detailed instructions on what authority (e.g., various sector ministries) are responsible for what projects (Holm-Hansen 1997). Approximately half of the cases subject to the EIA legislation, between 1990 and 1994, resulted in an EIA report. An evaluation of the effectiveness of the Norwegian EIA system, completed in 1995, identified an apparent shift to "up-front" planning and the facilitation of compromise and consensus (in many cases) as EIA benefits. Ineffective scoping procedures and a weak treatment of alternatives, also, however, were noted (Tesli 1995).

Norwegian EIA is legislated through Chapter VII-a of the *Norwegian Planning and Building Act* of 4 August 1995 and corresponding regulations (13 December 1996) The Act describes the general scope of EIA requirements, EIA documents and the EIA planning process. The competent authority is identified. Explicit reference is made to transboundary impacts The Minister may require an assessment of possible transboundary effects. Regulations (including appendices) to the Act; list the projects for which EIA is mandatory and for which an EIA may be required, provide criteria for determining when an EIA is required (for Appendix II projects) and include more detailed requirements concerning such matters as information requirements, the study programme, notification and circulation, procedures, EIA content and time limits.

The revised 1996 provisions make local and regional governments, in their capacities as plan authorities, responsible for EIA enforcement for some projects. Coordination with the physical plan process is required when the project must be approved in the local development plan. The local government authorities are responsible for coordination (Holm-Hansen 1997). The *Planning and Building Act* also regulates land use and regional planning in Norway. Impacts on the use and protection of resources are explicitly identified as a development consideration.

The Regulations, cited above, are being revised. This revision is mandated by EU Council Directive 97/11/EC. Directive 97/11 is to be

implemented by the member states and by Norway by 14 March 1999. The revisions will address:

- The need to harmonize Appendix I and II in Chapter VII-a of the *Planning and Building Act* (the lists for which EIA is mandatory or shall be evaluated for possible EIA) with Annex I and II of Directive 97/11.
- The need to clarify whether EIA shall be carried out for the projects on Annex II of Directive 97/11 if the project can have substantial environmental impacts; and
- Regulations that attend to Article 7 of Directive 97/11 on transboundary environmental impacts and the UN/ECE *Convention on EIA in a Transboundary Context*.

The *Planning and Building Act* also is under revision. On 23 October 1998 a committee was established by the Government to revise the Act. The committee will work for four years. Its task is to assess whether the Act can be revised to better incorporate such concerns as sustainability, biological diversity, energy efficiency and the integration of EIA into land use planning.

The Ministry of Environment initiated a research program to facilitate the integration of EIA into land use planning. Extensive guidance and training measures were subsequently introduced to help incorporate EIA into land use planning. The Ministry also encourages the application of EIA principles to programmes (especially in the transport sector) and to regional policies. In January 1995 the Government issued a revised administrative order to include the consideration of the environmental effects associated with Cabinet decisions. Consultation with the Ministry of Environment was required. The Ministry has prepared an administrative order concerning how EIA should be assessed at the policy level (Ministry of the Environment 1995).

Although not part of the European Union, Norway amended its legislation in 1997 to accommodate EU Directive 85/337. Norway is committed to the principles of the EU Directive as a member of the European Economic Area (entry on January 1, 1994)(Ministry of the Environment 1995; Holm-Hansen 1997). Under the EU Directive a more detailed scope is required, there must be a clearer link between the EIA process and the basis for decision-making and EIA is mandatory for far more projects. Norway also applies the EU two list system. The amended EU Directive (97/11) and the proposed SEA Directive will necessitate further changes in the Norwegian EIA system. The Norwegian Ministry of the Environment, in cooperation with the former Nordic ad hoc group on EIA and the Nordic Council of Ministers, held a seminar in Oslo concerning the new SEA Directive proposal on March 4, 1999.

In 1993, Norway ratified the *Espoo Convention on EIA in a Transboundary Context*. In addition, it has been a party to the *Nordic Convention on the Protection of the Environment* since 1974. Under the Nordic Convention parties are obliged to notify neighbouring countries of any negative impacts from a planned or existing activity. In addition, Norway has signed the *UN Convention on Biological Diversity* and the *UN Framework Convention on Climate Change*.

EIA coordination, among the members of the Nordic Council of Ministers, takes place through the ad hoc group for Environmental Impact Assessment (the EIA group) (Tesli and Husby 1999). One relevant project, of the group, is the *Coordinated Application of the Espoo Convention*. As part of this initiative, the EIA Centre at the Norwegian Institute for Urban and Regional Research (NIBR) has recently undertaken a study of Nordic experience related to EIA and transboundary impacts (Mareng and Lind 1997). The NIBR also provides a yearbook on the implementation of EIA in Norway. The first yearbook covers the years 1997 and 1998. Subsequent yearbooks will be annual. The yearbook provides an overview of the implementation of EIA legislation and describes ongoing research and development of relevance to EIA.

Norway is a founding member of the Nordic Centre for Spatial Development (Nordregio). Other founding members include Denmark, Finland, Iceland and Sweden. A new EIA Network was launched in January 1999, hosted by Nordregio in Stockholm and financed by the Nordic Council of Ministers.

EIA cooperation was addressed in the current Environmental Strategy, launched in 1996 and to be completed in the year 2000. The possibility of a new long-term strategy, until the year 2020, for sustainable Nordic development, is being considered. The evaluation of the current strategy will be reported to the Nordic environmental ministers in November 1999. The role of EIA and SEA in the new strategy has yet to be determined, It is expected that EIA and SEA will assume a prominent role given the work of the new Nordic EIA network.

EIA in Norway takes place within the context of a great many related environmental initiatives. Examples include; coordinated country level, strategic and transport planning, an environmental policy for sustainable development, the application of environmental protection measures in municipalities, participation in initiatives to protect the Arctic and North Sea ecosystems and a strategy for integrating environmental considerations into development cooperation and assistance decisions.

Germany

In Germany, there is a sharing of environmental responsibilities between the Federal governments and the states. The Federal Environmental Agency (FEA) was created in 1972. Federal government policies in Germany are coordinated through the Ministry of Environment, Nature Conservation and Nuclear Safety. The FEA coordinates environmental controls, prepares legislation and regulations and formulates EIA procedures (Gilpin 1995).

EIA was formally introduced in Germany in 1975 when the Federal government promulgated its *Basic Guidelines for the Assessment of the Environmental Compatibility of Federal Measures*. The Guidelines stipulate that the environmental consequences of all Federal measures and acts are to be examined. No changes, however, were made to environmental law.

Work began on a mandatory, national EIA law after the passage of EU Directive 85/337/EEC. The *Environmental Assessment Act* (the Act) of 1990 implemented the EU Directive. The Act enables the Federal government to issue binding *Common Administrative Guidelines*. Responsibility for the EIA process remains under the jurisdiction of the project approval authority.

The Act was followed by other legislation and amendments related to land use planning, mining and emissions, to integrate EIA into other consent procedures (e.g., *Federal Pollution Control Act, the Waste Avoidance and Waste Management Act, the Federal Water Act* and Federal Acts governing forest management, railways and highways). The Act was applied to infrastructure projects in 1991 and to industrial projects in 1992. An amendment to the Statutory Ordinance on permitting procedures for nuclear plants was passed in 1994. The *Administrative Regulation on EIA* was adopted in 1995.

As a result of legislative modifications, EIAs are now only required for development plans where EIA is compulsory and EIAs are no longer required for land use plans (CEC 1998).

The EIA is an integral part of the development consent procedure (e.g., consents under emission control legislation) The *Immission Control Act*, for example, expressly provides for the post-auditing of industrial plants. Consequently, post-auditing is often a condition of approval (CEC 1998).

The states (Laender) are generally responsible for implementing the *EIA Act* (CEC 1998). Some individual states implemented the 1990 law and others have used statutory ordinances to address project-level EIA (Donnelly *et.al.* 1998).

Key features of the Act include:

- Proponent submits specified project information to the authority;
- A broad definition of the environment;
- Screening procedures (against legally binding threshold values – primarily for industrial plants);
- Non-mandatory scoping;
- Report contents (as per Act and individual state legislation);
- Links to related legislation (e.g., route determination for highways and waterways, site allocation as part of regional planning);
- Mandatory and discretionary project lists;
- Internal review by responsible authority;
- Provision for participation of Authorities of other countries; and
- Provision for public participation during scoping and report review (includes hearing provisions).

The EIA system involves two stages. The second stage pertains to licensing and permit procedures (Gilpin 1995). Implementation of the EEC Directives is undertaken at the Federal and state levels (depending on the constitutional division of power) by EIA Acts, special acts or statutory ordinances.

The Federal government has prepared numerous EIA guidelines and working aids (assembled in an EA handbook). Technical EIA guidelines apply to various sectors (e.g., Federal waterways, highways, road projects, EIA in local development planning, water management, cultural assets). The German EIA association has published further guidelines to address such matters as EIA for business, EIA quality criteria, the treatment of flora and fauna in EIA and public participation (Donnelly *et.al.* 1998) Several technical guidelines have been published at the state level, addressing such matters as air emissions, nature and landscape impacts and the integration of EIA into regional planning (Sadler and Verheem undated).

Court decisions have assumed a significant role in the application of German EIA requirements. Various court decisions have affected analysis scope (a procedural rather than a substantive requirement), project scope, public participation (general public informed, affected public entitled to express views), the examination of alternatives (serious alternatives only) and third party standing (not a requirement). These

decisions have limited public involvement and the decision-making weight of EIA. Court decisions also have assumed a role in interpreting the manner in which European Union EIA Directives are to be implemented in Germany.

A new planning act can into force in January 1998 (Bauund Raumordnungsgesetz). The changes to the EIA system take into account EC Directive 97/11/EC. SEA is still being debated (Donnelly *et al.* 1998).

A proposal has been advanced for a bi-lateral procedure, between Germany and Poland, to address transboundary impact concerns. Transboundary impacts, between Germany and Poland, was the subject of a major research project. The Franco-German Council of the Environment and the Upper Rhine Conference have passed resolutions intended to prepare the ground for the harmonization of environmental legislation (Cupei and Lotz 1998). Germany is a signatory to *the UN Convention of Biological Diversity, the UN ECE (Espoo) Convention of Transboundary EIA, the UN Framework Agreement on Climate Change* and the *Protocol on Environmental Protection to the Antarctic Treaty*.

Special acts have been passed to shorten EIA-related planning and permitting to accelerate infrastructure approval, especially in the former East Germany. Germany is currently attempting to integrate its legislative history into a unified environmental code (Wagner 1999).

The Netherlands

The Netherlands began the process of developing a formal EIA system in the late 1970s with a series of research studies. The proposed legislation was refined using several trial run EIAs and a bill was introduced in 1981. The EIA provisions were subsequently incorporated into amendments to the *Environmental Protection (General Provisions) Act*, (1987) consolidated in the *Environmental Management Act* (1993) and replaced by *Environmental Management Act* (1994 and 1999). The Environmental Impact Assessment Decree (1987, 1992,1994 and 1999) and the Environmental Impact Assessment Notification of Intent Decree (1987 and 1993) support the EIA legislation. Provinces may pass their own EIA legislation, but only three provinces had done so by mid-1994 (Wood 1995).

Major features of the Dutch EIA system, as of mid-1994, included:

- Integrated into existing decision-making procedures and consents;
- Not confined to projects;

- Applies to public and private projects (most EIAs for private developments);
- Requirements to assess alternatives and undertake scoping (includes project-specific guidelines) (the alternative most friendly to the environment must be identified and assessed) ;
- EIA report content requirements;
- Public participation provisions for both scoping and report review with third party right of appeal against decisions;
- Public hearing provisions;
- Central role for the Dutch EIA Commission (200 experts appointed by Royal Decree) in screening, scoping, report review and in the determination of procedures for post-implementation audits; and
- Detailed monitoring and auditing requirements including evaluation of actual impacts and remedial action if impacts more adverse than predicted (Wood 1995; Scholten 1996; UN ECE 1991).

Amendments to the Dutch *Environment Management Act* and *EIA Decree* have:

- Brought Dutch requirements into conformity with the European EIA Directive (e.g., Annex I and II project lists and screening procedure for Annex II projects) (criteria and thresholds apply to Annex II projects);
- Introduced a screening procedure for a new group of projects (case-by-case decisions);
- Addressed transboundary impacts, to conform to the Espoo Convention (e.g., obligatory information exchange and consultation when transboundary impacts);
- Added new wording of the environmentally most sound alternative;
- Introduced the concept of compensation for negative impacts that cannot be mitigated;
- Required an environmental paragraph for policies (not part of Act's EIA section);
- Served to promote sustainable development; and
- Extended EIA to a greater range of industrial, infrastructure, oil and gas and land development projects and lowered thresholds for groundwater extraction and river dyke reinforcement projects (Gilpin 1995; EEC 1998).

Further minor amendments are in process to bring the *Environmental Management Act* and the *EIA Decree* into conformity with European *Directive 97/11/EC*. EIA also was formally extended to Dutch funded development cooperation activities with potentially important environmental impacts in 1993.

Future amendments to the *Environmental Management Act* will address the following issues:

- The decisionmaking on requests for exemption from the obligation to carry out an EIA will be transferred from the Minister of VROM to the authorities that are competent in terms of the EIA procedure; and
- The ex-post evaluation, which is obligatory for all EIA procedures, will become selective (the decision about the execution of an evaluation program will be made as part of the decision for which the EIA is carried out).

The major stages in the Dutch EIA process include:

1. Preliminary stage; proponent consults with the competent authority;
2. Publication of a starting notice / outline of the proposed activities, possible alternatives and environmental interests;
3. Submission of advice on specific guidelines for the EIS by the Commission for EIA (includes provisions for public role);
4. Establishing specific guidelines for the EIS by the authority, completed for the decision-maker;
5. Preparing the EIS by the proponent;
6. After acceptance by the competent authority, publication of the EIS, together with a license application or draft policy plan;
7. Reviewing the EIS by the public and the Commission for EIA;
8. Decision-making about the activity; and
9. Implementation of the activity and evaluation of environmental impacts.

The Dutch Ministry of Housing, Spatial Planning and the Environment launched EIA 2000+ in 1992. Under this project national and regional policy makers and practitioners are looking back at over 12 years of EIA experience and ahead to the future. The review also is addressing implementation of EU Directive 97/11, the incorporation of the existing EIA procedures into the licensing process, improving the relationship between EIA and spatial planning and stimulating the scoping process (includes a scoping guide).

The Ministry of Housing, Spatial Planning and the Environment (VROM) is responsible for drafting and implementing EIA legislation, regulations and guidelines. The government body, in charge of the decision for which the EIA is prepared, manages the individual EIA process. The proponent prepares the EIS. The Commission for EIA (an independent private foundation) advises the competent authority regarding the terms of reference and the quality of the review (Donnelly *et. al.* 1998). The EIA Commission applies explicit criteria to assess decision-making adequacy. It also provides advice regarding activities in developing countries. The Evaluation Commission (a separate commission from the EIA

Commission) formally evaluates the functioning of the EIA system (every 5 years and with an annual report of the Commission's work).

VROM and other Ministries have prepared numerous EIA manuals (*Manual on EIA)* and guides (e.g., scoping, alternatives, post-auditing, impact forecasting methods, measuring, compiling and monitoring, map preparation, geographic information systems, different project types, EIS screening procedures, transboundary EIA methodology) (Wood 1995; Jeltes and Hermens 1990; Donnelly *et. al.* 1998; Sadler and Verheem undated). VROM has launched various initiatives to enhance EIA quality and effectiveness, including a 1993 study of the quality of impact statements and a pilot study on the effectiveness of EIA in the decision-making process. The Commission for EIA also has expressed its views on EIA methodology.

The first report of the Evaluation Commission (1990) was generally favourable, although some amendments were suggested, included several to bring the Dutch EIA requirements into conformity with the European EIA Directive Wood 1995). The original Dutch EIA requirements did not fully conform to the European EIA Directive. The second Evaluation Commission report (1996) concluded that the EIA system was functioning reasonably well but recommended that EIA procedures start at an earlier stage and be incorporated into licensing procedures under the *Environmental Protection Act*. They also suggested refinements in screening and monitoring requirements and advocated experiments in the use of EIA procedures and the use of the Commission for EIA as a "knowledge bank".

Dutch EIA requirements take place within the context of a multi-level (national, provincial, local) environmental (e.g., environmental policy plan, national environmental action plans, nature conservation plan) and spatial (e.g., national spatial plan, provincial land use plan, local housing and landscape plan) planning system. Both forms of planning tend to be subdivided by sector. Integration within and among these planning forms has been an ongoing concern (Bouwer 1994). National environmental planning (e.g., national environmental policy plan) also encompass international policies, concerns and environmental obligations.

The Ministry of Foreign Affairs operates an informal EIA system for decision-making, with advice from the Ministry of Housing, Spatial Planning and the Environment (Scholten 1997). An environmental (e-test) of legislation is required for all policy initiatives that require a cabinet decision and do not require an EIA (Tonk and Verheem undated, De Vries and Tonk 1997, Sadler 1996). The Netherlands, in conjunction with Germany and Belgium, have prepared draft bi-lateral EIA agreements (de

Boer 1999). The Netherlands also is a signatory to the *UN Convention on Biological Diversity, the UN ECE (Espoo) Convention on Transboundary EIA, the UN Framework on Climate Change* and *the European Convention on the Protection of the Archaeological Heritage (the so-called Malta Convention).*

United Kingdom (UK)

Hallmark characteristics of the British decision-making system are discretion, negotiation and persuasion (Therivel 1998). The UK uses a case-by-case approach to determine the need for EA. The UK has undertaken EA primarily by integrating EA requirements into existing, largely planning, requirements, although some additional regulations were required (Bond 1997).

The formalization of EA in the UK began with the finalization of the European Directive 85/337/EEC. Up until 1983 Britain had been a strong opponent to the Directive, largely on the grounds that a comparable level of environmental protection is provided by the extensive land use planning system in the UK.

The Directive was implemented in the UK through:

- *The Town and Country Planning (Assessment of Environmental Effects) Regulations 1988 (SI 1988 and No, 1199)* (and subsequent amendments) (in the UK and Wales);
- over 40 regulations, pertaining to such projects as trunk road and motorway proposals, electricity and pipeline works, harbour works, salmon farms, land drainage and afforestation schemes;
- the *Environmental Assessment (Scotland) Regulations (1988)* in Scotland; and
- the *Planning (Assessment of Environmental Effects) Regulations (Northern Ireland) (1989)* in Ireland.

Amendments to the *Town and Country Planning Regulations* added nuclear power plants to the mandatory list (1992) (SI No. 367). No. 1994/667 extended the application of EA to projects not covered by the Directive (e.g., wind generators, coastal protection works, motorway service areas) and added various procedural obligations to facilitate public consultation and to more fully satisfy provisions of the Directive (SI No. 667 67) (1994).

Also, the Secretary of State for the Environment (and for Wales or Scotland) may, under the *Planning and Compensation Act (1991),*(the 667 Regulations implement this Act) require EAs for projects requiring

planning permission, other than those listed in the Directive (Jones, Wood and Dipper 1998). The Regulations apply to development that falls within a relevant description under two separate lists. Development that falls with Schedule 1 requires EIA in every case. Development that falls under Schedule 2 requires EIA where the project is likely to have significant effects on the environment. Schedule 3 to the 1999 Regulations set out the "selection criteria" which must be taken into account in determining whether a development is likely to have significant effects on the environment. It identifies three broad criteria: the characteristics of the development, the location of the development and the characteristics of the potential impact, although not all will be relevant in every case.

In the light of these, the Secretary of State's view is that, in general, EIA will be needed for Schedule 2 developments in three main types of cases; 1) for major projects which are of more than local importance; 2) for developments which are proposed for particularly environmentally sensitive or vulnerable locations; and 3) for developments with unusually complex and potentially hazardous environmental effects.

Local planning authorities generally decide when an assessment is required. The appropriate Secretary of State is the authority for major infrastructure projects. Strict criteria or thresholds have been developed for Annex I projects but Annex II projects have been left largely at the discretion of local authorities (a source of a little controversy and a few court cases). The manner in which the Directive has been interpreted and implemented also has sparked minor controversy (Bond 1997).

The European Union adopted various amendments to the Directive on 3 March 1997. The amended Directive had to be implemented by 14 March 1999. The newly formed Department of the Environment, Transport and the Regions (DETR) began by instigating consultation on the changes (Jones, Wood and Dipper 1998). The *Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999 SI No. 293* implement the amended Directive to the extent that it relates to the Town and Country Planning system in England and Wales. It came into force on 14 March 1999. Equivalent amendments were passed for Scotland and for projects falling outside the EIA Directive (EEC 1998). The Directive is being implemented in the equivalent planning systems in Scotland and Northern Ireland and other consent systems in the UK which are not covered by these systems and by SI 1999/293.

The main changes brought about by the new Regulations include:

- extends the range of projects subject to EA requirements;

- a formal scoping stage has been added subject to a developer's request;
- the local planning authority (LPA) must formally make a, publicly available, determination concerning whether an EA is required;
- the developer must provide information on the main alternatives studied, with reasons for the eventual choice, taking into account environmental effects; and
- the LPA or the Secretary of State must inform the public of the final decision, with reasons (although this requirement was previously applied).

Other UK consent systems also have or are being modified to implement the amended Directive. New guidelines (2/99) are being prepared to explain the changes, including a replacement circular for 15/88 and a new guide to the procedure to replace the 1989 guide.

The Department of the Environment (including offices in Scotland, Wales and Northern Ireland) has produced numerous EA-related policy planning guidelines, good practice guides, circulars, leaflets and research reports. Other departments have produced guides for various project types (e.g., roads, pipelines, flood defence) and environmental components (e.g., nature conservation, new woodlands, planning and enterprise zones, landscape and countryside recreation) (Donnelly *et. al.* 1998). Several local authorities also have prepared EA guideline documents (Hickie and Wade 1998; Hakes 1996).

The UK EIA planning process encompasses the same procedural and substantive elements found in most other jurisdictions (e.g., screening, scoping, environmental description, impact magnitude and significance, mitigation, formal review, public consultation). The LPA staff reviews the environmental statement but is not required to produce a formal review report. No formal criteria or checklists are used to reach a determination, although the Department of the Environment provides guidance documents. The main concern has been that the EA adequately identify and address relevant environmental issues. This analysis must be in sufficient detail to allow a decision, on whether a proposed project should be allowed to proceed, to be taken in the full knowledge of its likely environmental effects.

Schedule 4 to the Regulations gives details of information that must be specified in the ES (Part II) and other such relevant information (Part 1).

The local planning authority (LPA) must take into consideration the information contained in the Environmental Statement (ES), any

comments made by the consultation bodies and any representations from members of the public about environmental issues.

SEA in the UK represents an honouring of the commitment to take fuller account of the environment in decision-making, as expressed in Britain's Environmental Strategy (Department of the Environment 1990). The UK SEA approach has, as with projects, been to integrate the assessment of the environmental implications of policies, plans and programmes into existing systems and procedures, rather than to create new arrangements or legal requirements. Also, each department has a "Green Minister" who should encourage the integration of environmental considerations into Departmental strategy and policy (Lee and Hughes 1995). SEA in the UK is, however, largely discretionary (Sadler 1996). SEA in the UK is undertaken:

- by the central government (government departments and agencies are required to assess all potential effects of new policy proposals, including environmental effects);
- in the form of ad hoc sector-specific SEAs for various public bodies (e.g., flood alleviation schemes, national water resource strategy, proposed National Forest);
- in the form of an "environmental profile", as part of the application for European Community Structural funds (funds support regional development, economically lagging regions, disadvantaged rural areas);
- by local planning authorities (government guidance requires local planning authorities to take into account environmental considerations when preparing development plans – statutory plans at county and district levels that set out strategic land use aims and the framework for development consents); and
- through regional planning (guidance on environmental appraisal has been developed by regional planning conferences [strategic groupings of local authorities], under existing arrangements, within a non-statutory framework; the Government's policy is to strengthen and formalize regional planning and, under the proposed changes, regional plans will include an appraisal of their environmental and sustainability implications) (Therivel 1998). Local development plans are subject to environmental appraisal.

There has been a considerable effort in the UK to evaluate the effectiveness of EA and SEA requirements and the quality of EA and SEA documents (Jones, Wood and Dipper 1998, Therivel 1998; Thompson, Treweek and Thurling 1997; Glasson *et. al.* 1996; Weston *et. al.* 1997; Hickie and Wade 1998)

United States

EA in the United States was formalized on January 1, 1970 when the *National Environmental Policy Act (NEPA)* was signed into law. NEPA "establishes environmental policy for the nation, provides an interdisciplinary framework for federal agencies to prevent environmental damage, and contains "action-forcing" procedures to ensure that federal agency decision-makers take environmental factors into account." (Bass and Herson 1993, 3). *NEPA* altered the mandate of every federal agency, requiring them to develop EIA processes to comply with the Act. NEPA applies to federal actions – direct federal actions, licences permits and financial assistance.

Major features of NEPA include:

- Founded on broad environmental policies, objectives and principles;
- Requirements to use systematic, interdisciplinary approach to agency decision-making (natural sciences, social sciences, design arts);
- Creation and roles of Council on Environmental Quality (CEQ) (methods and procedures developed in consultation with CEQ);
- EIS required for Federal legislation or other major Federal actions significantly affecting the quality of the human environment (i.e., not limited to projects);
- Addresses environmental impacts, adverse environmental effects, alternatives to the proposed action (including non-action alternative), the relationship between short-term use of man's environment and the maintenance and enhancement of long-term productivity and any irreversible and irretrievable resource commitments; and
- Applies to state agencies if Federally funded and to independent regulatory agencies.

NEPA requirements have been applied and extended through numerous regulations and guideline documents. Amendments to the *Clean Air Act*, in 1972 provided an independent review role for the US Environmental Protection Agency (EPA). Binding guidelines were issued by the CEQ in 1978 to address the procedural aspects of NEPA and in 1986 to address situations where information is incomplete or unavailable. Major participants include the CEQ (policy oversight role), the US Environmental Protection Agency (implementation oversight role) and various lead (primary Environmental Impact Statement [EIS] responsibility and cooperating agencies (jurisdiction by law or special expertise). NEPA-related regulations, executive orders and guidelines address such matters as:

- CEQ and Agency roles (e.g., procedures for reducing paperwork and delays, time limits, relationship to other environmental laws, interactions with state and local laws, interactions with other agencies, public involvement, decision-making role);
- EIS and EA (environmental assessment when no significant impact) requirements (whether to prepare an EIS, preparation and review of an EIS, EA and EIS document style and content requirements, document circulation requirements);
- Procedures for differentiating between categorical and non-categorical exclusions;
- Common questions and answers regarding CEQ's NEPA regulations;
- Scoping, interdisciplinary analysis, significance interpretation and mitigation guidance;
- Extraterritorial application (under Executive Order 121140 required to consider major Federal actions that occur outside US boundaries affecting the global commons [e.g., oceans, Antarctic]);
- Guidance for application to international development organizations and to assessment of non-government activities in the Antarctic;
- Guidance for incorporating social, ecological, biodiversity, pollution prevention, cumulative effects, transboundary (to come) and environmental justice considerations into the EIA process and documents;
- Guidance for various project types and activities and
- Voluntary preparation, public participation, stakeholder contacts, filing systems and electronic publishing standards.

Court decisions have generally supported *NEPA* procedural and content requirements but have left Agencies with more discretion regarding the substantive policy of *NEPA* (i.e., must consider environmental consequences but not required to make substantive decisions focusing on environmental protection or implementing *NEPA* policy objectives) (Swartz 1998). Court decisions also have reinforced and refined *NEPA* requirements regarding such matters as application to all Federal agencies and the need to analyze reasonable alternatives, interpret impact significance and the assessment of cumulative effects (Swartz 1998; Therivel *et. al.* 1995).

Seventeen states have adopted laws based on the *NEPA* model (Pendall 1998) and thirteen others have more limited forms of environmental reviews (Sadler 1996). Five states also require that their local governments conduct environmental assessment (Pendall 1998).

Table B-1 – Australia – Topic Area Overview
Resources
• Process concerns length, timing and uncertainties • Timing requirements • Measures to reduce duplication and overlap (e.g., national environmental significance, accreditation, national EIA principles, criteria and standards, national EIA agreements, national strategy for ecologically sustainable development) • EIA training for developing countries (training resource manuals) • Australian EIA network (EIA information accessible to practitioners) • Social impact unit (Western Australia) (now disbanded) (Beckwith 1994)
EA Methodology
• EIA principles by stakeholder (ANZECC 1991) • Criteria –need and level of EIA (ANZECC 1996) • EIA acceptability criteria (Commonwealth EPA 1994) and Western Australia (Sippe 1997) • Precautionary principle and sustainable development criteria in proposed EIA legislation • Integration of EIA with resource and land use planning (Tasmania) and with pollution control (Western Australia) • Indigenous participation (CEPA 1996) • Environmental management plans (Queensland) • Social impact unit (Western Australia) (now disbanded) (Beckwith 1994) • Best practice – mining
Public Participation
• Requirement for a clear, concise summary for each document type • Requirements vary among Australian jurisdictions regarding if and extent of public notification/involvement in draft and final project guidelines, draft and final report review and public inquiry availability; varies by EA document type • Victoria – consultative committee • Conmmonwealth – proponent must respond in writing to any public comment; all final reports public (including comments, recommendations and conditions) • Proposed Bill – details consultation procedures with states and territories • Very limited use of participant or intervenor funding • Public registry • Queensland – discussion paper – consultation principles (Harvey 1998) • Western Australia – public role in referring proposals • Study – strategies for involving Indigenous peoples Craig and Ehrlich et.al. 1996)
Strategic Environmental Assessment
• 1974 Act refers to more than projects but very rarely applied • Increasingly addressing classes or sectors of proposals and decision-making framework; looking at SEA for a sector or regional approach where Commonwealth has clear jurisdiction (e.g., offshore petroleum exploration) • Proposed Commonwealth Bill – SEA for policies, plans and programs; discretionary • General process described and specific process for Commonwealth-managed fisheries • Explicit provision for SEA in Western Australian EA requirements; largely plans and programmes; experience so far positive (Sadler 1996) • Selective examples of SEA at state level (Western Australia, New South Wales); increasing move to implement SEA in Tasmania and Queensland (Harvey 1998) • Commonwealth cabinet documents required to consider ecologically sustainable development (reference to National Strategy for Ecologically Sustainable Development) (Marsden 1998) • Several examples of regional environmental planning that incorporates SEA principles (e.g., resource planning, regional conservation) • Locational EA triggers in several states • EIA and land use linked in several states

Table B-1 – Australia – Topic Area Overview
Scientific Challenges to EA
• Biological diversity • Sustainability • Environmental risks and uncertainties (the Precautionary Principle) • Threatened and endangered species, communities and ecosystems • World heritage sites, wetlands, migratory species, nuclear actions and marine environments • Cumulative effects • Climate change
Administrative and Procedural Challenges to EA
• Streamlining procedures • Document quality • EIA and sustainability • Links between EIA and other forms of environmental management • Monitoring and implementation • Process effectiveness • Issues associated with Indigenous peoples • The integration of EIA and economic instruments • Information systems • The integration of human health and biodiversity concerns into EIA • Merging EIA and environmental management systems

Table B-2 – Norway – Topic Area Overview
Resources
• Planning and licensing authorities address their requirements; input from regional environmental authorities; primary task of Ministry of Environment to ensure important national and regional concerns addressed • EIA Section small (6 staff); reviews EIAs (40 study programs in 1998) and revisions to EIA legislation and regulations • EIA training and information for municipal planners and local participants; also effort to integrate EIA into land use planning • EIS used as a basis for consent decisions for various other Acts related to environmental protection (reduces overlap and duplication concerns)
EA Methodology
• Ministry of the Environment works on methodology, together with several research institutions and some private companies; a national competence centre at the Norwegian Institute of Urban and Regional Research • Legislation provides for consideration of indirect, cumulative, large scale and global effects • Addresses issues, such as biodiversity with individual EIAs • No specific efforts to address traditional knowledge; can be included as part of public consultation • Committee established to revise Act; considering how to integrate sustainability, biodiversity, energy efficiency and integration of EIA into land use planning
Public Participation
• Requirement to inform public at an early stage • Provisions for public involvement in scoping (review of study program) and in EIA report review • A compulsory open meeting is required in the district in which the project will be built or implemented • Trend to greater and more interactive public participation • Increasing shift to more up-front planning • A greater degree of compromise and consensus occurs on most projects • Minister can order developer to bear cost of expert assistance and the like incurred by landowners and municipalities
Strategic Environmental Assessment
• Research program to better integrate EIA and land use planning • SEA research program (Nordic Group – Finland, Iceland, Norway and Sweden); detailed case study analysis; lessons and recommendations (e.g., need to enhance screening criteria, implementation, public participation, transparency, alternatives identification and analysis, treatment of uncertainties and monitoring difficult but possible to identify policy decisions and strategies – early commencement critical; also need for independent professional review and more guidelines; variations between national and regional and local cases; major methodological limitations not encountered; need for clear tiering) • Application of SEA to transport sector; plan for roads and traffic, coastal highway and transport corridors • Detailed administrative order addresses how to consider environmental effects of policies; consultation with the Ministry of Environment is required • Norway requires Ministries to account for how addressed environment in annual budgets (sustainable development role, problems, solutions); "green budget" • Encourages integration of EIA principles into sectoral programmes and regional policies • Trend toward movement from project EIA to SEA • Multi-level planning system; including national policy priorities, directives and guidelines; includes in one case an environmental balance sheet
Scientific Challenges to EA

Table B-2 – Norway – Topic Area Overview
• Transboundary pollution • Sustainability • Biodiversity • Cumulative effects • Integration of spatial and environmental planning • Marine pollution, resources and ecosystems • Arctic and Antarctic environments • Encroachment on areas of high biological productivity (e.g., coastal zones) • Climate change and greenhouse gases • Spread of chemical hazards to health • Environment in development cooperation and assistance
Administrative and Procedural Challenges to EA
• Interpretation and implementation of EU EIA directives • Integration of sustainability, biodiversity, energy efficiency • Integration of EIA into land use planning • Extraterritorial EIA application • Integration into EIA of life cycle assessment • Integration into EIA of the precautionary principle • Development of a cross-national understanding of EIA • Merging EIA and environmental management systems • Decentralization of EIA implementation

Table B-3 – Germany – Topic Area Overview
Resources
• Industry had argued that EIA would overburden bureaucracy and ruin economy; has not been the case but demand for further streamlining (Wagner 1999) • Integration of EIA with development consent process contributes to a more efficient and effective EA process • Sharing of environmental responsibilities between Federal and state levels, many legal forms and prominent role of courts makes for quite cumbersome process
EA Methodology
• Ecological risk assessment for several projects • Guidelines (e.g., scoping, impact analysis, prediction methods – transport, public participation, mapping, EIA in local development planning, EIA quality criteria) (some guidelines by EIA Association) • Impact significance criteria in EIA regulation • Manual on transboundary EIA • Research study – loss of area for nature conservation and landscape protection • Environmental quality objectives – nature, landscape, water, soil and air
Public Participation
• Provision for public participation during scoping and document review • Reasons must be provided for public objections, reasons must be informed of reasons for projects and proponent must deal explicitly with public objections • Mediation possible but no legal requirement • Increasing use of public meetings, advisory committees and workshops • Increased role of public participation; includes application in policy and program development • Minimal use of participant funding • Consultation with both general interest groups and interest groups • Plan can be challenged before administrative court if believe concerns not properly weighed and balanced • Public participation arrangements generally working well; usually exceeds standards
Strategic Environmental Assessment
• Existing Federal legislation mainly applies to projects • Requirement to take environment into account for identified sectors (e.g., agriculture, transport) • SEA for Federal transport planning (e.g., highways and waterways) • Some SEA at state and local level • Federal agency has commissioned several research studies concerned with integrating EIA into local development planning • Various state level guidelines address the integration of EIA into regional planning • Public participation in SEA a recurrent issue • Consent requirements ensure EIA-type of assessment for much broader range of projects • Recent legislation changes reduce role in land use and development plans (CEC 1998)
Scientific Challenges to EA
• Transboundary impacts • Waste disposal • Relationship between EIA and landscape planning • Sustainability • Ecological risks and uncertainties • Greenhouse gases and climate change • Air pollution • Waste avoidance and management • Human health risks • Biodiversity

Table B-3 – Germany – Topic Area Overview
Administrative and Procedural Challenges to EA
• Interpretation and implementation of EU EIA directives • Transboundary EIA methods • Responding to pressure to streamline the EIA process • Relationships between project-level EIA and SEA • Quality control in EIA • EIA as a procedural and /or a substantive requirement • EIA in local development planning

Table B-4 – Netherlands – Topic Area Overview
Netherlands
• Resources devoted to EIA and SEA extensive • Occasional concerns regarding time delays and cost but costs of preparing EISs well below 1% of investment cost of initiatives • EIA Commission can call upon about 200 appointed members (experts) to provide guidance; other experts can be co-opted as needed • Working parties of experts advisee on guidelines and assess accuracy and scientific content of EIA report and completeness relative to EIA requirements and guidelines • Many training courses by authorities and universities
EA Methodology
• Comprehensive manual on EIA; numerous other guides (e.g., post-auditing, forecasting methods, scoping, different project types, map preparation, evaluation methods, measuring, compiling and monitoring, GIS systems) • EIS screening methods • Explicit operational review criteria • EIA quality and effectiveness studies • Sponsored research (e.g., transboundary EIA, evaluation of actual effects) • Practical examples of the integration of EIA and spatial planning
Public Participation
• Provisions for public participation at both scoping and report review • Third party right of appeal against decisions • Public hearing provisions • Some large environmental groups receive public funding for intervenor activities (annual budget) • Increased use of public consultation before the official procedures commence • Searching for improved consultation – consensus building processes for strategic environmental assessment (Niekerk and Voogd 1999) • Successful development and testing of role playing exercise for EIA practitioners and participants (Bonte 1996) • Trend toward more intensive, interactive forms of consultation • Continuing concern by NGOs and citizens regarding decision-making contribution of EA and access to scientific and technical knowledge
Strategic Environmental Assessment
• EIA can be linked to licenses and permits, to local land use plans, to waste policies and to other sectoral decisions • Environmental Management Act applies to significant policy plans and programmes involving locational decisions (e.g., airport or seaport development) • EIA Decree applies to structure plans for electrical supply, industrial and drinking water supply, landscaping, nature conservation, outdoor recreation, provincial waste management proposals, mineral extraction plans and certain land use plans • Environment (e) test of legislation; applies to all policy initiatives that require a Cabinet decision and do not require an EIA (screening / scoping phase, selected questions supported by helpdesk, documented in explanatory note to legislation, quality of information in Explanatory note reviewed by Ministry of Justice and Joint Support Centre (DeVries and Tonk 1997) • The Ministry of Housing, Physical planning and the Environment and the Ministry of Economic Affairs recently opened a Joint Support Centre for Draft Legislation; helps address questions about environmental and business effects of draft legislation; also addresses the quality of the information included in the explanatory notes accompanying legislation • The Ministries of Justice, Environment and Economic Affairs launched a joint operation to ensure that the explanatory notes accompanying draft legislation include an outline of the

Table B-4 – Netherlands – Topic Area Overview
nature and extent of their intended and unintended effects • Recently four Dutch national research institutes evaluated a series of public investment plans; the evaluation included social and economic impacts – legitimacy, benefits, cost effectiveness, uncertainties and risks and alternatives (Annema *et.al.* 1999). • EIA requirements within a multi-level environmental and spatial planning systems • Second evaluation (1995) of (S)EIA showed that more than 70% of involved competent authorities and developers had favourable opinions of (S) EIA; effectiveness diminished if doesn't start early and need for effective communications strategy for skeptical decision makers
Scientific Challenges to EA
• Transboundary impacts • Greenhouse gases and climate change • Emissions reduction and pollution • Acidification, eutrophication and dispersion • Water depletion • Traffic and noise • Cumulative effects • Sustainability • Resource management • Waste generation and disposal
Administrative and Procedural Challenges to EA
• Interpretation and implementation of EU EIA Directives • Procedural flexibility, selectivity and streamlining • Integration across disciplines (social, economic, environmental) • Public participation in SEA • Integration across sectors • Integration between EIA and strategic spatial planning • The integration into EIA of health, poverty, social and gender assessment • Document quality and focus • Monitoring and auditing requirements

Table B-5 – United Kingdom – Topic Area Overview
Resources
• Concerns with over-regulation, costs, delays and confidentiality • Institute of EA and Management – a loose association of consultancies, industrial companies and universities; now offers EIA review • Research undertaken by 5 EIA Centres; has provided a good understanding of EA costs and effectiveness; helps spearhead EIA thinking and practice (Nelson 1999) • Department has supported training course and expert exchanges with East European countries • Integration of EIA requirements into existing system and high decree of discretion in system has resulted in inconsistencies and inefficiencies • Concerns with ambiguities and implementation problems associated with European EA Directives
EA Methodology
• Government does not prescribe which methods; up to developer • Substantial research on methods by EIA Centres (some supported by government); has addressed EIA and cumulative effects, biodiversity, risk assessment and other issues) • Indicative screening criteria and thresholds • Extensive use of good practice guides for both project and plan level EIA; also numerous EA-related policy planning guidelines, circulars and leaflets • Research reports (e.g., monitoring, planning and evaluation, information evaluation) • Other departments have produced guides for various project types (e.g., roads, pipelines, flood defence) and environmental components (e.g., nature conservation, planning and enterprise zones, countryside recreation)
Public Participation
• Regulations require that impact statement be made available to the public and that a non-technical summary be included • Virtually no intervenor funding; at the discretion of the developer; very rare • Consultation bodies are required to provide information, if requested to do so, to a developer, when an EA is being prepared • Tends to be the regulatory minimum for most projects (e.g., site notices, advertisements, document availability) • For major projects, drop-in centres and public meetings are customary • No third party appeal right against approval • Developer can appeal decision by local planning authority (LPA) that an EA is required • Only after an ES submission is the LPA required to consult public
Strategic Environmental Assessment
• Central government – government departments and agencies required to assess all potential effects of new policy proposals – DOE guidance – Policy Appraisal and the Environment; further refinements after 1997 review • Sector-specific SEAs for various public bodies (e.g., flood alleviation, national water resource strategy, proposed National Forest) • Environmental profile required for EU Community Structure Funds (e.g., depressed areas) • SEA by local planning authorities (guidance from central government) • SEA for regional planning (environmental appraisals); non-statutory framework; government policy to strengthen); much enlightened practice • Each department has a "Green Minister" to encourage environmental integration
Scientific Challenges to EA
• Biodiversity loss • Global warming • Human health effects • Marine environments

Table B-5 – United Kingdom – Topic Area Overview
• Natural resource management • Nature conservation • Derelict land • Water, land and air pollution • Integration of spatial and environmental planning
Administrative and Procedural Challenges to EA
• Interpretation and implementation of EU EIA Directives • The integration of SEA, SIA and economic analysis to form sustainability appraisal • Streamlining to address concerns with over-regulation, cost and confidentiality • Enhanced pre-submission consultation • Plan and project levels links • Addressing identified project-level EIA weaknesses • Treatment of ecological impacts • Addressing identified SEA weaknesses

Table B-6 – United States – Topic Area Overview

Resources

- Resources devoted to EIA, especially at level, are extensive; time and money an ongoing concern
- Major challenge – continuing and expanding EIA practice while streamlining the process and conserving financial resources; environmental review capacities being strained by decreasing personal resources and an expanded universe of opportunities
- Extensive regulations and guidelines concerned with reducing time and paperwork
- Use of tiering (e.g., summarize or incorporate by reference)
- Streamlining of approvals within EPA (functional equivalency)
- Partnering with other government levels
- Focus on EIA effectiveness (CEQ 1997a)
- Use of interagency agreements to coordinate timetables and to address disputes
- Use of interagency task forces to streamline environmental approvals
- Merging of EIA and other permitting requirements (transportation planning, coastal zone management, wetlands)
- NEPA Net – includes laws, regulations, guidelines, data links, environmental organizations, NEPA training and (for some departments) full text and retrieval of EA documents (Jesse 1998)

EA Methodology

- NEPA regulations – cumulative effects, significance interpretations, scoping, document acceptability, mitigation, alternatives and procedural aspects
- CEQ EIA effectiveness and efficiency study (1997a)
- CEQ guidelines (e.g., scoping, pollution prevention, environmental justice, biodiversity, cumulative effects, document format and content and interdisciplinary approaches)
- EPA guidelines (e.g., procedural matters, document content, non-government activities in the Antarctic, environmental justice, pollution prevention [pollution prevention checklists for 30 industry types], new source permits / activities [17 guides], environmental effects abroad and social impact assessment, habitat evaluation, grazing on Federal lands, ecological impacts from highways, ecological considerations for NEPA documents)
- EPA sponsored research (e.g., life cycle assessment, biodiversity uncertainties and research needs, environmental audits) EA Sourcebook, EA resource guide, EA checklist and rating system
- Individual departmental guides for a wide variety of project types; also address [e.g., Department of Energy DOE] such matters as electronic publishing standards, privatization, transboundary impact assessment, public participation and mitigation action plans)
- DOE newsletter (what does and doesn't work in EA)

Public Participation

- Public involvement during screening, notice of intent, scoping, review of draft EIS (must respond to concerns raised); preparation of final decision, record of decision and monitoring
- Public hearing often if controversial
- Extensive role of NEPA litigation (by public) in shaping NEPA implementation
- DOE – directory of stakeholders
- Increasing use of alternative dispute resolution
- Greater emphasis on outreach and multi-stakeholder consultation; trend – more collaborative planning
- Continuing concern with Agencies that do the minimum; barriers increasing (Soloman et.al. 1997)
- Limited use of intervenor or participant funding
- Continuing concerns with barriers to tribal involvement
- Use of world wide web to improve public access; CEQ and EPA sites (e.g., regulations, guidelines, annual reports, filings, bibliographic and training information, spatial data systems,

Table B-6 – United States – Topic Area Overview
international environmental disasters, EISs – notices and summaries; plans for custom-designed searches of filed EISs and EPA comments; other agencies such as DOE post EISs for review
Strategic Environmental Assessment • NEPA requirements allow for preparation of programmic EIS • Provision of tiering (project, site-wide or area, program); incorporate by reference • Applied in numerous sectors (e.g., resource management, pest control, flood control) • Applied to address multiple projects (e.g., in a watershed) and sites (e.g., site remediation, weapons decommissioning) • Increasing emphasis by land management agencies on ecoystem assessment and management (e.g., forest plans, river basins) • Helpful for integrating reviews (e.g., PEIS and coastal zone management) • Many references to successful experiences • 470 PEIS between 1970 and 1992 by Forest Service alone • Applied in California to planning • Helpful in addressing cumulative effects • Weak on monitoring
Scientific Challenges to EA • Impacts on global commons • Biodiversity • Ecosystem management and protection • Sustainability • Cumulative effects • Social effects • Ecological and human health risk • Environmental justice • Transboundary impacts • Waste management
Administrative and Procedural Challenges to EA • Effects on communities, neighbourhoods and individuals • Public involvement (including alternative dispute resolution) (focus on earlier involvement); especially for minority communities and low income communities • Making process, documents and Web sites more accessible and user-friendly • Tribal matters • Integration of sustainable development • Linking NEPA to environmental management systems • EIA earlier in project development • Interagency cooperation and collaboration • Implications of privatization • Integration among disciplines and agencies (including permitting) • Place-based approaches to information analysis and synthesis (including role of GIS) • Monitoring followed by adaptive environmental management; including mitigation implementation and long term monitoring • Transboundary impacts • Continuing concern with efficiency and effectiveness; streamlining NEPA implementation, improving document quality, conserving financial resources and responding to expanding opportunities

APPENDIX C

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Appendix D

Survey Form

Interview #	Position:
Date:	Organization
Interviewee:	Phone: Fax: e-mail:

1. Introduction *(How do you do? My name is David Lawrence with Lawrence Environmental. I am preparing a discussion paper in advance of the five-year review, on behalf of the Canadian Environmental Assessment Agency, that addresses the subject of national and international trends in environmental assessment. If you wish, I could have a letter faxed to you that authorizes me to undertake this work. I have several questions that I would like to ask you. The interview should last approximately thirty minutes. The results of individual interviews will be kept confidential. Responses will not be attributed to individuals and no quotes will be included without permission.)*

Legislation, Regulations and Procedures *(I would first like to discuss with you EA legislation, regulations and procedures in your jurisdiction?)*

2. Have there been any major changes in EA legislation, regulations, guidelines or procedures in your jurisdiction in the past five years? Yes ( ) No ( ) Don't Know ( )

   If yes, proceed to Question 3.
   If no, proceed to Question 5.
   If don't know – Ask who would be a good person to answer the question.

3. If yes, please briefly describe the nature of the changes.

   _____
   _____
   _____
   _____
   _____

4. If yes, what do you think are the major reasons for these changes?

_____
_____
_____
_____

5. If no, what are the major reasons why no major changes have occurred?

_____
_____
_____
_____

6. How would you say that EA-related decision-making has been affected by these changes (or lack of changes)?

_____
_____
_____
_____

7. Are you aware of any planned or anticipated changes in EA legislation, regulations, guidelines or procedures in your jurisdiction? Yes ( ) No ( ) Don't Know ( )

If yes, proceed to question 7.
If no, proceed to question 9.
If don't know, who would be a good person to answer the question.

8. If yes, could you briefly describe your understanding of the major elements of the planned or anticipated changes?

_____
_____
_____
_____

9. If yes, could you briefly describe your understanding of the major reasons for the planned or anticipated changes?

_____
_____
_____
_____

10. If no, could you briefly, indicate why no changes are planned or anticipated?

_____
_____
_____
_____

11. What would you expect to be the decision-making implications of the planned or anticipated changes (or of a failure to make changes)?

_____
_____
_____
_____

Resources Devoted to EA *(I would next like to discuss the subject of the resources (e.g., money, people) devoted to EA in your jurisdiction.)*

12. Have the resources devoted to EA in your jurisdiction generally kept pace with the need over the past five years? Yes ( ) No ( ) Don't Know ( )

If yes, proceed to Question 13.
If no, proceed to Question 14.
If don't know – Ask who would be a good person to answer the question.

13. If yes, what has made it possible to keep up with EA-related needs?

_____
_____
_____
_____

14. If no, what has been the magnitude of the shortfall between resources provided and the need? Major ( ) Moderate ( ) Minor ( )

15. If no, why has their been a shortfall between resources provided and need?

_____
_____
_____
_____

16. If no, what have the implications for EA-related decision-making been of the shortfall between resources provided and need?

_____
_____
_____
_____

17. If no, what strategies have been adopted to cope with the resource deficiency?

_____
_____
_____
_____

18. If yes or no, do you expect this pattern to continue? Yes ( ) No ( ) Don't Know ( )

19. If yes or no, why?

Complex Methodological Issues

(I would next like to discuss your jurisdiction's experience with such complex methodological issues as cumulative effects analysis, biodiversity, the integration of traditional knowledge and ecological and risk assessment modelling.)

20. Which methodological issues have proven to be particularly difficult to address in EA requirements and procedures over the past five years?

21. Why have these methodological issues been so difficult to address?

22. What strategies and measures have been used to cope with these methodological issues?

23. What have been the decision-making implications of these methodological issues and of the strategies and measures adopted to address the measures?

24. Which methodological issues do you expect to be especially troublesome in the future?

25. Please, provide reasons for your choices.

26. How might these emerging methodological issues affect EA-related decision-making in the future?

Public Participation *(I would next like to discuss public participation approaches in your jurisdiction.)*

27. Which are the predominant public participation methods and procedures used in your jurisdiction?

28. Which of these methods and procedures have proven to be most effective in contributing to decision-making?

29. Please give reasons for your choices.

30. Which methods and procedures have proven least effective in contributing to EA-related decision-making?

31. Please give reasons for your choices.

32. What have been the major changes in public consultation methods and procedures in your jurisdiction over the past five years?

33. Why do you think that these changes have occurred?

34. What changes do you anticipate in the future concerning public consultation methods and procedures?

35. Why do you think that these changes will occur?

36. Is intervenor funding provided in your jurisdiction? Yes ( ) No ( ).

37. If yes, please elaborate.

38. Is participant funding provided in your jurisdiction? Yes ( ) No ( ).

39. If yes, please elaborate.

_____
_____
_____
_____

Policy, Program and Plan EA (Strategic Environmental Assessment)

(I would next like to discuss with you how the environmental consequences of policies, plans and programs are addressed in your jurisdiction.)

40. How often are policies, programs or plans subject to EA requirements in your jurisdiction? YES - Usually ( ), Frequently ( ), Sometimes ( ), Occasionally ( ), Rarely ( ), NO - Never ( ).

41. If yes, under what conditions are policies, plans or programs subject to EA requirements?

_____
_____
_____
_____

42. If yes, can you give me an example or two?

_____
_____
_____
_____

43. When not subject to EA requirements, by what other procedures or requirements are the environmental consequences of policies, plans and programs addressed?

_____
_____
_____
_____

44. Has the treatment of the environmental effects of policies, plans and programs changed at all in the past five years? Yes ( ), No ( ), Don't Know ( )

45. If yes, can you briefly highlight the nature of the changes?

_____
_____
_____
_____

46. What would you say have been the decision-making implications of the current procedures for assessing the environmental effects of policies, plans and programs?

_____
_____
_____
_____

47. Are you aware of any planned or proposed changes in the procedures and requirements of assessing the environmental effects of policies, plans or programs?

Yes ( ), No ( ), Don't Know ( )

48. If yes, please elaborate.

_____
_____
_____
_____

Major Environmental Challenges

(I would next like to discuss with you how major environmental challenges, such as global environmental change, biological diversity and trans-boundary pollution are addressed in your jurisdiction.)

49. How are these types of major environmental challenges addressed by current EA requirements and procedures in your jurisdiction?

_____
_____
_____
_____

50. Has there been any change in the treatment of these types of major environmental challenges by your jurisdiction over the past five years?

Yes ( ) , No ( ), Don't Know ( )

51. If yes, could you please briefly describe the nature of the changes?

_____
_____
_____
_____

52. What do you believe have been the decision-making implications of the current treatment of major environmental challenges in your jurisdiction?

_____
_____
_____
_____

53. Are you aware of any planned or anticipated changes in the treatment, by EA requirements and procedures in your jurisdiction, of major environmental challenges?

Yes ( ), No ( ), Don't Know ( )

54. If yes, please elaborate.

Critical Emerging Issues

(Finally, I would like to discuss with you critical emerging EA issues.)

55. What would you consider to be the critical EA issues that have emerged in your jurisdiction over the past five years?

56. Please give reasons for your choices.

57. What have been the decision-making implications of these issues?

58. What do you anticipate are likely to be the critical emerging EA issues over the next five years?

59. Please give reasons for your choices.

60. What do you anticipate will be the decision-making implications of these future issues?

Relevant Literature and Contacts

61. Can you suggest any reports, studies or articles that effectively address any of the matters that we have discussed, either in general or with specific reference to your jurisdiction?

62. Is there anyone else who you would suggest we contact to address any of the matters that we have discussed, either in general or with specific reference to your jurisdiction?

_____

_____

_____

_____

Thank you for your cooperation!